

TECHNICAL MANUAL
[*SGML VERSION; SEE CHANGE
RECORD*]

OPERATION AND MAINTENANCE
INSTRUCTIONS
WITH ILLUSTRATED PARTS
BREAKDOWN

**CHEMICAL-BIOLOGICAL
MASK**

TYPE MCU-2/P, MCU-2A/P

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FOREWORD

This manual contains the information necessary to operate and maintain the Chemical-Biological Mask, Type MCU-2/P and MCU-2A/P.

Contents of this document were prepared in accordance with Technical Manual Contract Requirement (TMCR) No. NDMS-890272-000 and military specifications of the exact issue referenced therein. In accordance with the TMCR, this manual consists of six chapters.

The detailed contents of each chapter are based on MIL-M-15071H requirements and the general style and format are in accordance with MIL-M-38784B. Front matter and back matter are provided in accordance with the TMCR and with the above referenced specifications.

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SAFETY SUMMARY

This technical manual contains WARNINGS and CAUTIONS applicable to the use of the MCU-2/P and MCU-2A/P masks. Before using mask, personnel should be aware of the hazards which could be encountered, especially in a contaminated environment. Special attention to the instructions in this manual will assure safe wear of the MCU-2/P and MCU-2A/P series protective masks and accessories.

WARNINGS AND CAUTIONS:

USE OF SHALL, WILL AND SHOULD:

SHALL OR WILL: "Shall or will" indicates a mandatory requirement.

SHOULD: "Should" is used to indicate a non-mandatory desire or preferred method of accomplishment.

The following warnings and cautions appear in the text of this manual and are repeated here for emphasis:

WARNING

Use of improperly sized combat spectacles could result in mask failure allowing leakage of toxic agents causing sickness or death. (Page 999-7)

WARNING

Contact lenses shall not be worn with the MCU-2/P mask. Only approved MAG-1 combat spectacles may be worn with the MCU-2-/P mask. (Page 999-7)

WARNING

Use a caliper to measure the face length. The use of a ruler or tape measure will lead to an inaccurate reading due to the contour of the face. A leaky mask will not protect against toxic agents which can cause sickness or death. (Page 999-11)

WARNING

Ensure the small rubber plug found in the intake hole of some new canisters, and the screw cap protecting the intake valve of new masks, have been removed. (Page 999-14)

WARNING

Contact lenses shall not be worn with the MCU-2/P mask. Only approved MAG-1 combat spectacles may be worn with the MCU-2/P mask. (Page 999-14)

WARNING

Do not overtighten straps. Overtightened straps may distort the mask or pull it back over the hairline causing leaks of toxic chemical agents. (Page 999-14)

WARNING

If resistance is not felt when blowing into or sucking through the drinking tube, a leak is present and toxic agents could enter the mask. Do not drink. Chemical agents could be swallowed resulting in sickness or death. (Page 999-15)

WARNING

Collapsing of the mask lens while performing mask negative pressure check may unseat the mask outlet valve disc and cause it to become lodged in the outlet valve body. (Page 999-16)

WARNING

If mask seal failure occurs in a suspected chemical contaminated environment, once mask seal is reestablished, immediately seek medical attention. (Page 999-16, page 999-18)

WARNING

Ensure voicemitter is installed with the flange and four pins facing outward. Incorrect installation could result in leakage of toxic agents into the mask causing sickness or death. (Page 999-20)

WARNING

Install a new gasket under side voicemitter each time it is removed. Reuse of the old gasket could result in leakage of toxic agents causing sickness or death. (Page 999-20)

WARNING

The chemical-biological filter canister provided with this mask does not provide protection against ammonia or carbon monoxide fumes. (Page 999-24, page 999-41)

WARNING

This mask is not an authorized respiratory device for use during industrial chemical spills, and may not provide protection. (Page 999-24)

WARNING

This mask is not effective in confined spaces where there is not enough oxygen in the air you breathe to support life. (Page 999-24, page 999-41)

WARNING

With suspected presence of contamination, don your mask immediately. You must put the mask on before you take another breath. Toxic agents could be in the surrounding air and can cause sickness or death. (Page 999-26, page 999-31)

WARNING

You must check the mask for leaks when it is fitted and each time you put it on. A leaky mask will not protect you from toxic agents which can cause sickness or death. (Page 999-26)

WARNING

Do not hold mask by canister. A canister which has unscrewed could allow toxic agents to enter the mask which can cause sickness or death. (Page 999-26)

WARNING

Collapsing of the mask lens while performing mask negative pressure check may unseat the mask outlet valve disc and cause it to become lodged in the outlet valve body (Page 999-27)

WARNING

When wearing the mask with the hood over outlet valve (Figure 4-2), do not loosen the straps of the head harness for comfort. When straps are so loosened, the wearer is in danger of suffocation by carbon dioxide as well as being unprotected against toxic agent if it is present. (Page 999-28)

WARNING

When wearing the mask with the hood over outlet valve (Figure 4-2), do not loosen the straps of the head harness for comfort. When straps are so loosened, the wearer is in danger of suffocation by carbon dioxide as well as being unprotected against toxic agent if it is present. (Page 999-30)

WARNING

Collapsing of the mask lens while performing mask negative pressure check may unseat the mask outlet valve disc and cause it to become lodged in the outlet valve body. (Page 999-32)

WARNING

Do not store food in the waterproofing bag. Possible toxic effects could result. (Page 999-35)

WARNING

If you become overheated in very cold weather, do not remove your mask outdoors until your head cools and any sweat has dried. Frostbite may result if the mask is removed while your face is still wet. (Page 999-39)

WARNING

This mask is not an authorized respiratory device for use during industrial (Page 999-41)

WARNING

Install a new gasket under side voicemitter each time it is removed. Reuse of the old gasket could result in leakage of toxic agents causing sickness or death. (Page 999-51)

WARNING

Ensure voicemitter is installed with the flange and four pins facing outward. Incorrect installation could result in leakage of toxic agents into the mask causing sickness or death. (Page 999-53)

CAUTION

Never remove the mask from the carrier by pulling on the outlet valve cover. The cover may tear. (Page 999-27, page 999-29, page 999-31)

CAUTION

Do not store your mask in the waterproofing bag for more than 24 hours. Moisture and off-gassing buildup in the bag may damage the canister. (Page 999-35)

CAUTION

Keep the carrier free of grit and other dirt that might scratch the lens or clog the valves. (Page 999-40)

CAUTION

Check that the mask is dry, free of oil and solvents before stowing. Oil or solvents will damage the mask lens. (Page 999-40)

CAUTION

Do not store other items on top of the mask or place unauthorized items in the carrier. Damage to the mask may result. (Page 999-41)

CAUTION

Dampness will reduce the life of the canister. Be sure the mask is stored in a dry place. (Page 999-41)

CAUTION

Do not store mask in direct sunlight, or in hot stuffy areas. Damage to the mask will result. (Page 999-41)

CAUTION

Do not use solvents of any kind to clean this mask. Solvents could cause damage to the mask. (Page 999-47)

CAUTION

Do not let the canister get wet. The canister shall be replaced if it becomes wet. (Page 999-47)

CAUTION

Do not place mask in boiling water. Lens damage will result. (Page 999-48)

CAUTION

Do not dry-wipe lens. Lens damage could result. (Page 999-48)

CHAPTER 999

SECTION 1

INTRODUCTION AND GENERAL INFORMATION

1-1. INTRODUCTION.

1-2. Purpose.

This manual describes the operation and maintenance instructions and illustrated parts breakdown for the Mask Canister Unit-Personnel, type MCU-2/P, MCU-2A/P, hereafter referred to as the MCU-2/P. This manual complies with STANAG 2150.

1-3. Scope.

The operation and maintenance information contained in this manual will be followed by all Navy users of the MCU-2/P. Air Force Manual, Technical Order T.O. 14P4-15-1, Technical Manual for operation and maintenance instructions with illustrated parts breakdown: Chemical-biological Mask Type MCU-2/P, MCU-2A/P contains Air Force Specific operation and maintenance information and should not be used by Navy activities.

1-4. Improvement Report.

Recommended improvements to this technical manual shall be sent to Commander, Port Hueneme Division, Naval Surface Warfare Center, (Code 5B61), Port Hueneme, CA 93043-5007.

1-5. Related Publications.

The following is a list of related publications:

SB-3-30-2	ARMY SUPPLY BULLETIN Chemical-Biological Canisters And Filter Element Procedures And Serviceability Lists
NSTM Chapter 470	Shipboard BW/CW Defense and Counter-measures
SS010-AA-MMO- 010	Operators Manual, M291 Skin Decontaminating KR
STANAG 2150-ED3	Standard NATO Agreement: NATO Standards of Proficiency for NBC Defense
TO1 4P4-15-1	Chemical-Biological Mask Type MCU-2/P, MCU-2A/P

1-6. GENERAL INFORMATION.

1-7. Mask Purpose.

The MCU-2/P with serviceable canister installed protects the face, eyes and respiratory tract from chemical and biological warfare agents and radioactive gases and dust particles.

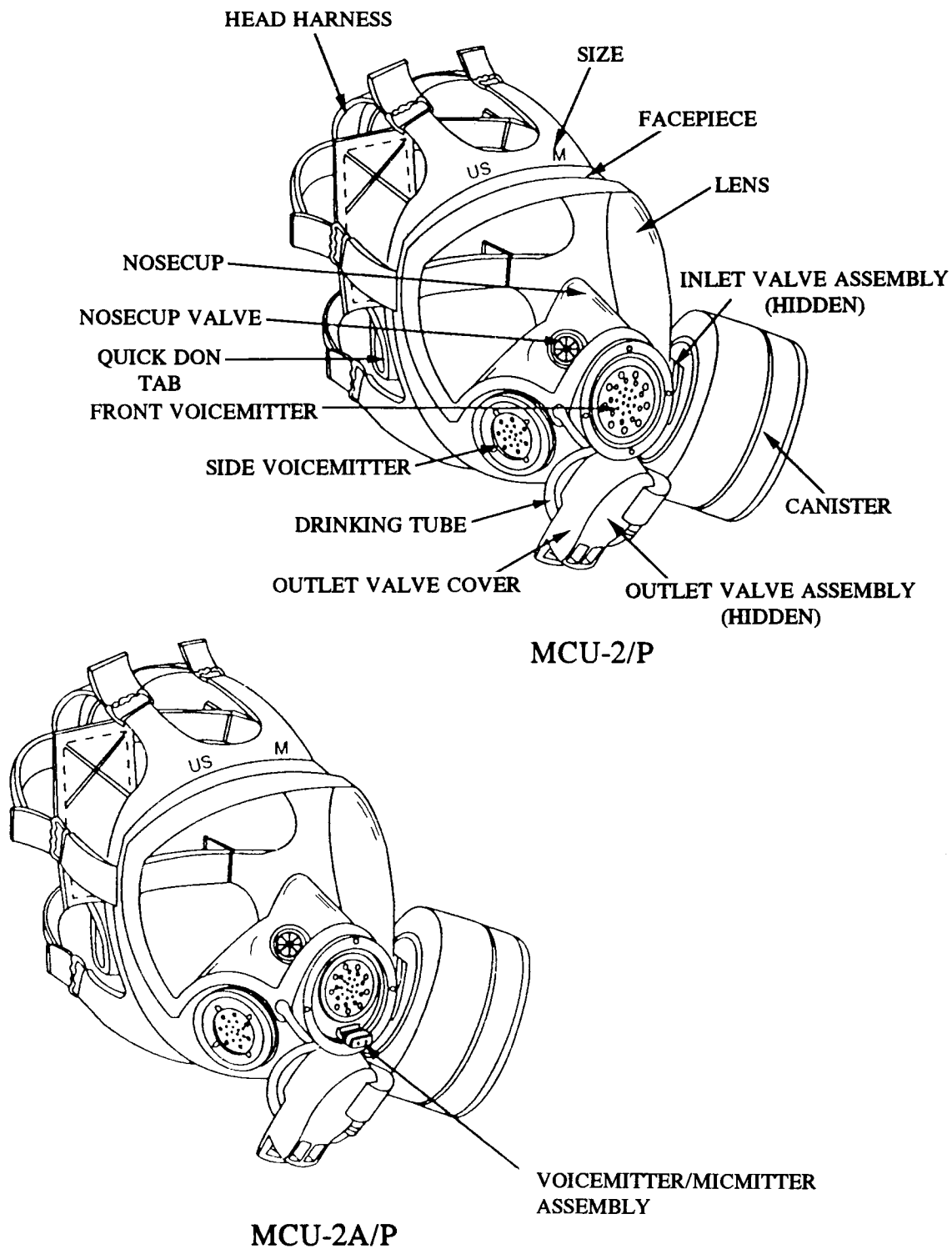


Figure 1-1. MCU-2/P, MCU-2A/P Chemical Protective Mask

1-8. Features.

The MCU-2/P has the following features:

- a. The mask provides user with eye and respiratory protection.
- b. The mask has two voicemitters: the front one is for face-to face speech and the side one is for use with communications equipment.
- c. The mask is equipped with a drinking tube. This enables user to drink from a canteen having an M1 canteen cap.
- d. The mask can be worn with approved maskcompatible spectacles.
- e. The flexible lens permits use of binoculars, a gunsight, or other optical equipment.
- f. The large single lens gives user a good allaround view.
- g. The canister (filter) can be used on either side of the mask. (See conversion, [paragraph 3-10.](#))
- h. There are three mask sizes. These are identified by raised letters on the mask above the lens, S for small, M for medium, and L for large.
- i. The voicemitter/micmitter assembly (MCU-2A/P only) has a redesigned front voicemitter allowing for face-to-face speech and includes the capability to connect an internal microphone for various radio communication needs ([Figure 5-9](#))

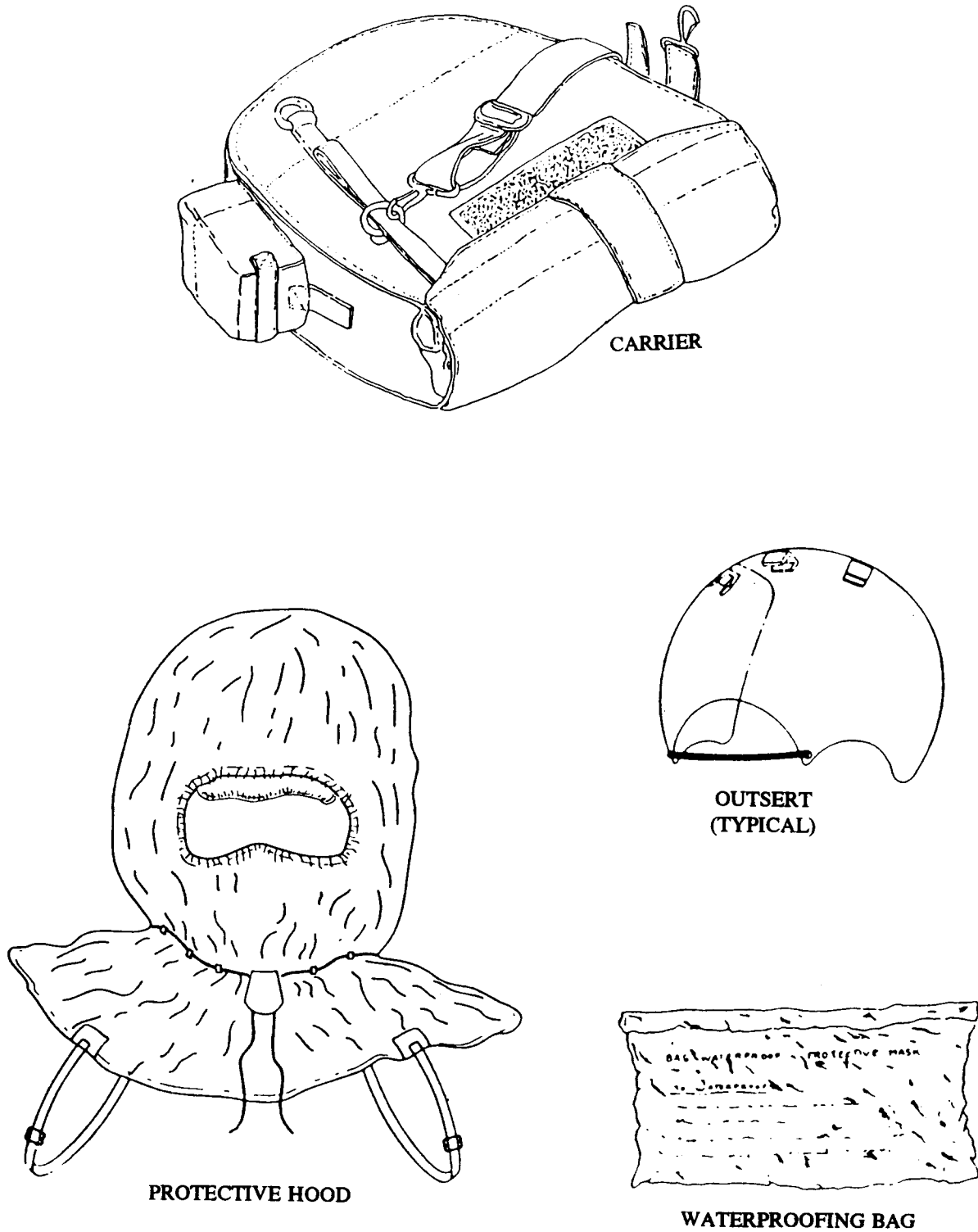


Figure 1-2. Mask Accessories

1-9. DESCRIPTION.

1-10. Components.

The MCU-2/P ([Figure 1-1](#)) consists of the following components and accessories:

- a. Facepiece - The facepiece is molded of silicone rubber. It forms an effective seal on the user's face.
- b. Lens - The lens is molded of an optically clear urethane material. It provides a distortion-free view. The lens is bonded onto the face-piece.
- c. Head harness - Six metal-tip elastic straps are attached to the facepiece tabs by buckles. A webbing headpad joins the straps together and holds them in the correct position. A quick-don pull tab is sewn to the headpad.
- d. Nosecup - The nosecup is molded of silicone rubber. It is located inside the facepiece. It is attached to the front voicemitter housing and seals around the outlet valve.
- e. Voicemitters:
 1. Side voicemitter - Two plastic discs in protective metal cases. The MCU-2/P is supplied from the manufacturer with the side voicemitter installed on the right side of the facepiece. It may be relocated to the left side of the facepiece when directed by higher authority in accordance with directions provided in [paragraph 3-10](#). The side voicemitter and a rubber gasket are held in place by a threaded retaining ring.
 2. Front voicemitter (MCU-2/P) - Two plastic discs in a protective metal case. The front voicemitter is held in place against the nosecup in the front voicemitter housing by a separate threaded retaining ring.
 3. Voicemitter/Micmitter Assembly (MCU-2A/P) - A redesigned MCU-2/P front voicemitter comprised of two plastic discs in a protective metal case and a microphone connector assembly. The voicemitter/micmitter assembly does not require a separate threaded retaining ring to hold it in place against the nosecup in the front voicemitter housing.
- f. Nosecup Valves - Two plastic one-way valve bodies with silicone rubber valve discs on each side of the nosecup.
- g. Inlet Valve Assembly - A one-way valve at the left side of the facepiece behind the canister. Consists of a plastic air deflector assembly with post mounted rubber valve disc and a rubber valve body.
- h. Outlet Valve Assembly - A one way valve at the bottom of the facepiece. It consists of a metal tube with internal and external drink tube connectors, installation stud for the outlet valve cover, a spoked outlet valve body and a rubber outlet valve disc assembly.
- i. Outlet Valve Cover - A rubber cover which fits over the end of the outlet valve body. The cover has a pocket which holds the drinking tube coupling.
- j. C2 Canister - The canister contains material to filter Chemical and Biological agents and radio active dust particles from the air. The canister screws into the inlet valve body. The canister utilizes a NATO standard thread. Filter elements will be replaced when:
 1. There is a clear indication that the use of chemical/biological agents is probable and MOPP 111 is set by the Commanding Officer or Unit Commander.
 2. Thirty (30) days have elapsed after exposure to chemical/biological agents (except for blood agents).
 3. Exposure to blood agents has occurred.
 4. They show evidence of mechanical damage such as breaks or cuts in the material or edge seal, a bent or split connector, etc.
 5. They have been immersed in water or have been wetted in any manner.

6. Excessive breathing resistance is experienced. (Clogged filter elements will increase breathing resistance but will not impair the ability of the filter elements to remove agents.)
7. Exposure to oily smoke has occurred.
8. A new C2 canister will be installed when MOPP III is initially set. If MOPP III is relaxed and then reestablished, the C2 canister should not be replaced at subsequent settings of MOPP III, until sixty (60) days have elapsed from the initial MOPP III setting. The service life for the C2 canister in a contaminated environment will not exceed thirty (30) days or sixty (60) days from the date of installation on the mask, whichever is shorter.

NOTE

The Commanding Officer or Unit Commander may direct Fleet Activities to replace the C2 canister prior to the above sixty (60) days if, in his tactical assessment, the C2 canister has an insufficient service life remaining to support the mission.

9. Refer to Supply Bulletin SB3-30-2 for C2 canister serviceability information.
- k. External Drinking Tube - The external drinking tube is a rubber tube connected to a metal feed-thru pipe on the outside of the outlet valve body. For MSA masks, the external drink tube is bonded to the feed-thru pipe; whereas, for Scott masks it is not bonded. Both methods of attachment are acceptable and the external drink tube is field replaceable on both masks. A quick disconnect coupling is attached to the other end of the external drink tube. This coupling mates with the M1 canteen cap.
- l. Internal Drinking Tube - The internal drinking tube is a rubber tube connected to a metal feedthru pipe on the inside of the outlet valve body. For MSA masks, the internal drink tube is not bonded to the feed-thru pipe; whereas, for Scott masks it is bonded. Both methods of attachment are acceptable and the internal drink tube is field replaceable on both masks.

1-11. Mask Markings.

Identification markings on the MCU-2/P are as follows:

- a. Manufacturer - The manufacturer is identified on the facepiece by a raised circular medallion located near the left neck strap.

NOTE

The numbers located within the medallion are used during manufacture and are NOT lot numbers.

- b. Lot Number - The lot number is printed on the right neck strap with indelible ink.

1-12. ACCESSORIES.

Accessories ([Figure 1-2](#)) consists of the following items:

- a. Carrier - The carrier is made of mildew resistant nylon. It has adjustable waist and shoulder straps. Pockets are provided inside and outside the carrier to hold other accessories.

- b. Outserts - The outserts are optically clear and tinted polycarbonate shells. The outserts protect the lens from scratches when the mask is stored in its carrier. The outserts also protect the lens from chemical droplets and oil and petroleum products when the mask is worn. Clips at the top and a rubber strap at the bottom hold the outsert onto the facepiece. Outserts are issued in two sizes: small and medium/large and are identified as such. Small outserts fit small masks. Medium/large outserts fit medium or large masks.
- c. Waterproofing Bag - The waterproofing bag is a sealable plastic bag, stowed in the carrier and used to protect the mask from moisture in wet and damp conditions.

1-13. ADDITIONAL ACCESSORIES.

Additional approved accessories ([Figure 6-1](#)) include:

WARNING

Use of improperly sized combat spectacles could result in mask failure allowing leakage of toxic agents causing sickness or death.

WARNING

Contact lenses shall not be worn with the MCU-2/P mask. Only approved MAG-1 combat spectacles may be worn with the MCU-2/P mask.

- a. Combat Spectacles - Only two sizes of MAG-1 combat spectacles are approved for use with the MCU-2/P mask. The size of the combat spectacle frame can be found on the inside of the frame over each eyelens. Persons requiring combat spectacles should contact their medical department representative. For authorized combat spectacle sizes and repair parts see [Figure 6-1](#).

NOTE

MAG-1 combat spectacles are also approved for use with the type A-4 oxygen breathing apparatus, replacing existing optical inserts.

- b. Canteen - Only canteens equipped with an M-1 cap are compatible for use with the MCU-2/P drinking system in accordance with [paragraph 4-18](#). A listing of canteen and associated accessories for use with the MCU-2/P can be found in [Figure 6-1](#).
- c. Canister Dust Cover - A canister dust cover has been approved for use with the MCU-2/P mask to prevent airborne dust and sand from entering the C2 canister and critically reducing the canister service life.
- d. Field Protective Hood - The field protective hood is made from rubber-coated nylon cloth. The hood has underarm straps which hold the hood in place, an adjustable neck strap to aid in hood pressurization, and two snapfastening temple tab straps for attaching the hood and mask temple tabs. The face opening in the hood is made to fit tightly around the lens.

1-14. Mask Issue.

Masks are shipped from the manufacturer with the following components:

a. MCU-2/P Mask	1
b. M-1 Mask Waterproof Bag	1
c. Mask Carrier	1
d. Clear Facepiece Outsert	1
e. C2 Canisters	2

NOTE

The Navy mask set was developed to meet the majority of the Fleets outfitting requirements. Special Navy activities requiring additional mask accessories are authorized to order same to support their operational requirements.

1-15. ABBREVIATIONS.

All abbreviations used in this publication are contained in the following list:

ABBREVIATIONS.

Abbreviations	Definition
APL	Allowance Parts List
ASSY	Assembly
CAGE	Commercial and Government Entity
CCA	Contamination Control Area
COSAL	Coordinated Shipboard/Shore Base Allowance List
°C	Degrees Celsius
DAS	Data Automated System
°F	Degrees Fahrenheit
FOD	Foreign Object Debris
I&S	Interchangeable and Substitute
IAW	In Accordance With
IPB	Illustrated Parts Breakdown
MCU-2/P	Mask Canister Unit-Personnel
MCU-2A/P	Mask Canister Unit-Personnel
MOPP	Mission Oriented Protective Posture
MPL	Maintenance Parts List
MSA	Mine Safety Appliances Company
NAVSEA	Naval Sea Systems Command
NSN	National Stock Number
NSTM	Naval Ships' Technical Manual
PN	Part Number
RC	Riot Control
SB	Supply Bulletin
SMR	Source, Maintenance and Recoverability
SPCC	Ships' Parts Control Center
TO	Tech Order

SECTION II

SPECIAL TOOLS AND TEST EQUIPMENT

1. There are no special tools or test equipment required for MCU-2/P operational level inspection and maintenance procedures. There are no parts of the MCU-2/P mask which require repair. All repair procedures are accomplished by replacement of defective parts in accordance with [paragraph 5-9](#).
2. The limited disassembly of the MCU-2/P mask that is approved is addressed in the Preparation For Use section, [paragraph 3-10](#), and the Repair or Replacement section of this manual, [paragraphs 5-13](#) thru [5-15](#).

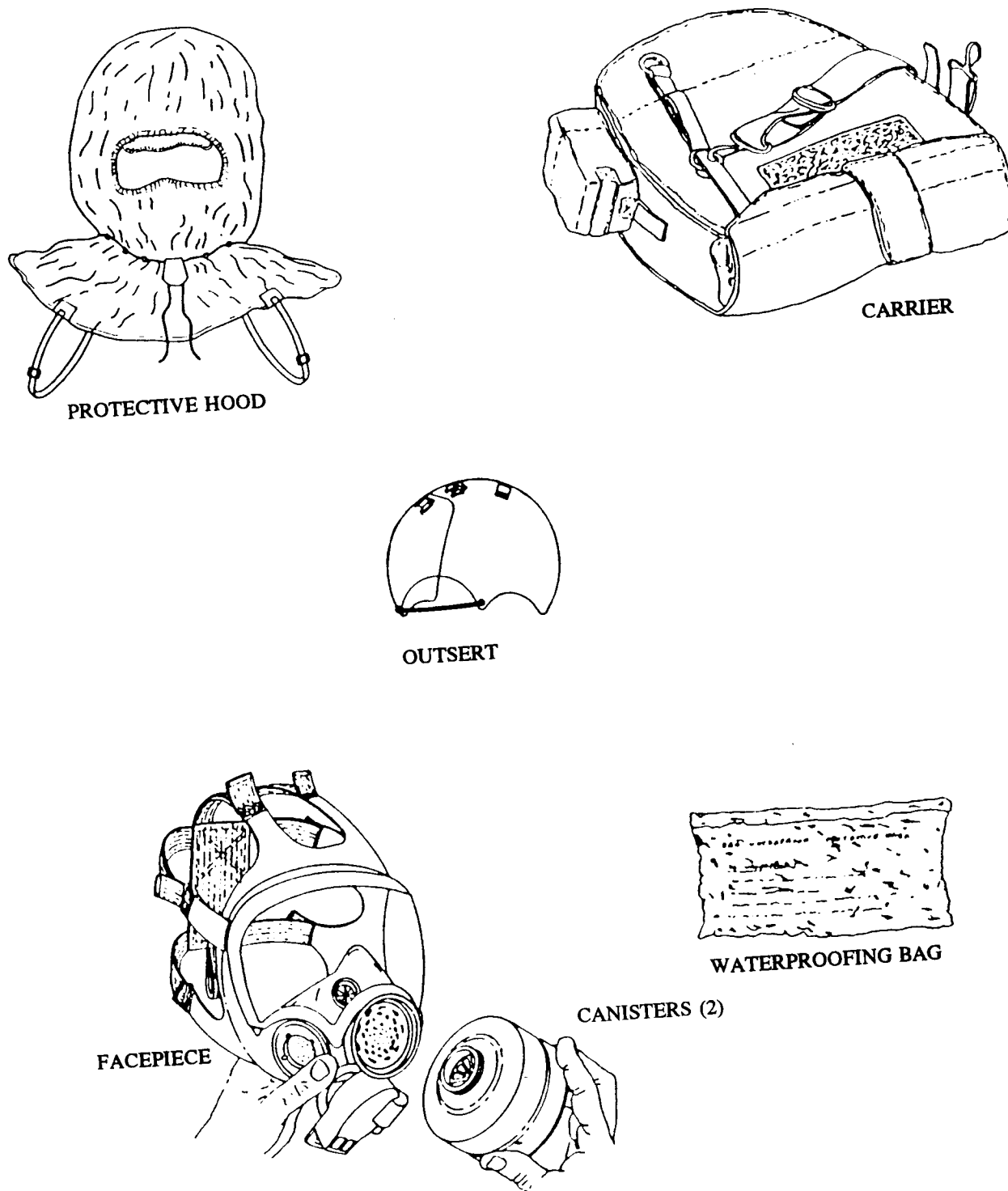


Figure 3-1. Unpacked Original Equipment

SECTION III

PREPARATION FOR USE AND SHIPMENT

3-1. PREPARATION FOR USE.

3-2. Unpacking.

Remove mask and components from shipping container.

3-3. Checking Unpacked Original Equipment.

See [Figure 3-1](#). Inspect the equipment for damage done during shipment. Report damage to the Damage Control Officer.

3-4. Selection of Mask Size.

Correct mask size selection is determined by a face length measurement. The use of any 6-inch vernier, dial or spring calipers, is required to measure the user's face length.

WARNING

Use a caliper to measure the face length. The use of a ruler or tape measure will lead to an inaccurate reading due to the contour of the face. A leaky mask will not protect against toxic agents which can cause sickness or death.

- a. Accurate location and marking of the two facial measuring points is necessary to assign correct mask size. The two points are described below and depicted in [Figure 3-2](#). Read descriptions and study the figure carefully before attempting to locate the two points on user's face. The points can be located either by visual inspection or by feel.
 - (1) The upper measuring point is the point of deepest depression at top of nose, between the eyes (see [Figure 3-2](#)).
 - (2) The lower measuring point is located at the center of the curved part of jaw bone (tip of chin; see [Figure 3-2](#)).
- b. Have the user sit erect with head held level and still, mouth closed, and teeth lightly together.
- c. Carefully locate and mark upper and lower measuring points.
- d. Place upper and lower tips of the caliper directly on the upper and lower points marked as directed in step c.
- e. To determine the correct mask size with any 6 inch vernier, dial, or spring calipers: Refer to [Figure 3-3](#), MCU-2/P Sizing Scale. Place caliper on the scale with one tip on the FIXED REFERENCE POINT. Align caliper with the scale and read the size where the other tip touches scale.

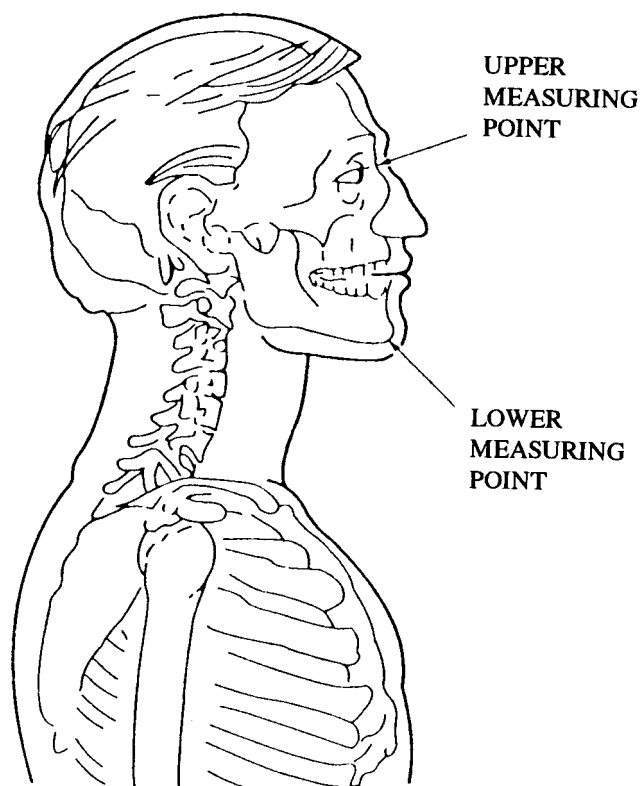


Figure 3-2. Facial Measuring Points

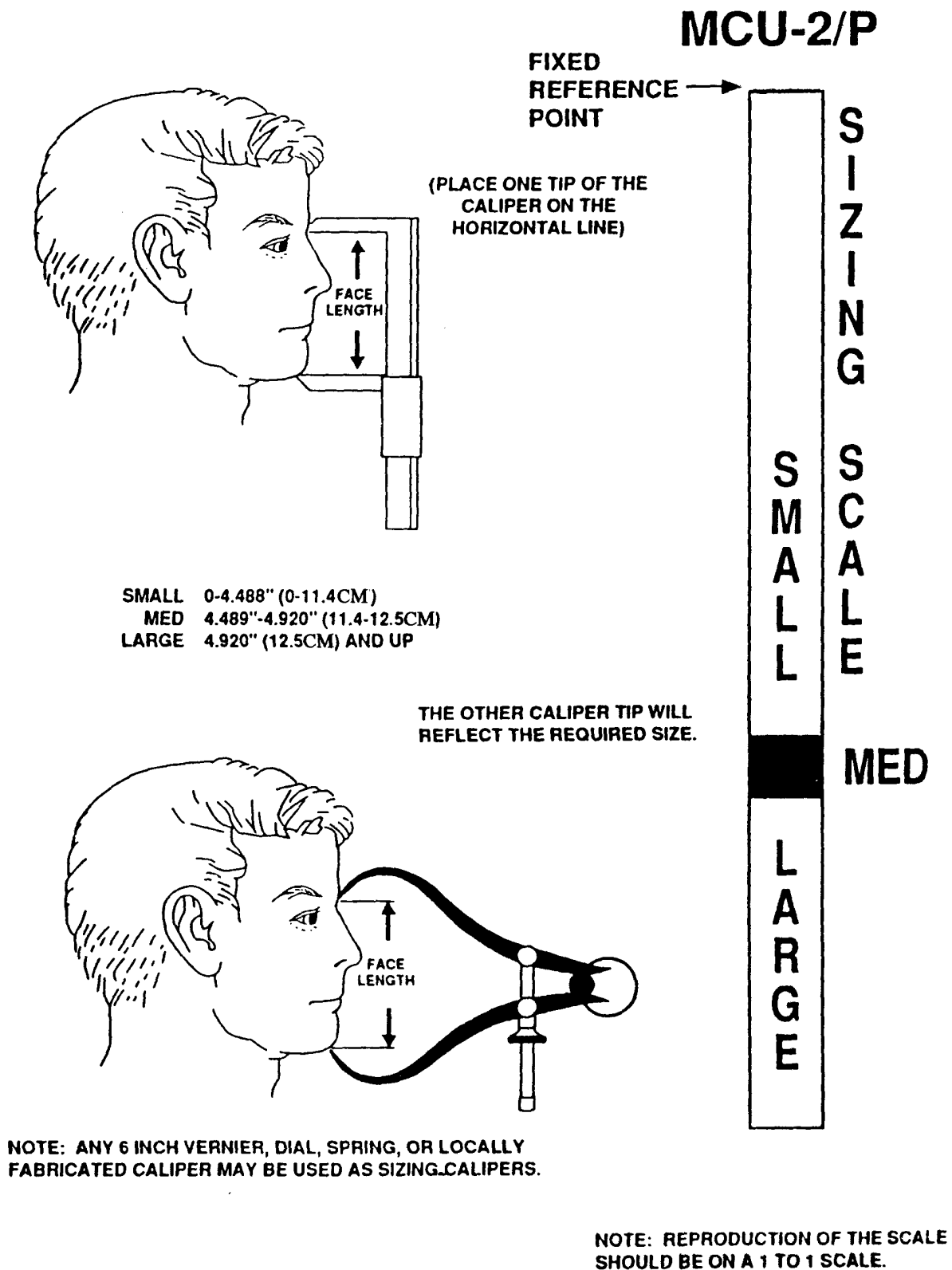


Figure 3-3. MCU-2/P Sizing Scale

3-5. Mask Fitting.

A correctly adjusted mask is necessary for the mask to fit properly. Leaks must be prevented and the user should be as comfortable as possible when wearing the mask. To adjust the mask the following procedures should be used:

WARNING

Ensure the small rubber plug found in the intake hole of some new canisters, and the screw cap protecting the intake valve of new masks, have been removed.

WARNING

Contact lenses shall not be worn with the MCU-2/P mask. Only approved MAG-1 combat spectacles may be worn with the MCU-2/P mask.

- a. Screw one canister on facepiece.
- b. Loosen straps of head harness. Be sure strap end taps are approximately 1 inch from buckles.
- c. (Optional) Remove outsert by pulling down on rubber strap under front voicemitter and lifting out and up.
- d. Reverse head harness by pulling harness over front of mask.
- e. Hold the outlet valve assembly in palm of right hand. Using left hand, push forehead hair aside. Place mask on face forcing chin cup very tightly against chin. Pull head harness over head using quick-don tab ([Figure 1-1](#)).
- f. Push mask as high on face as possible. Look down at nose to be sure mask is centered. Hold in this position with right hand until temple straps are tightened.

WARNING

Do not overtighten straps. Overtightened straps may distort the mask or pull it back over the hairline causing leaks of toxic chemical agents.

- g. Tighten one temple strap ([Figure 3-4](#)) with small jerks until mask feels snug on that side. Tighten other temple strap in same manner until both sides feel the same.

NOTE

Tighten all straps towards rear of head.

- h. Check that headpad is centered at the high point of rear of head. Adjust harness if necessary.

NOTE

Both hands may now be used.

- i. Run a finger under each temple tab front-to-back to check for snugness and to remove stray hair from sealing area.
- j. Grasp a neck strap in each hand and tighten with small jerking motions.
- k. Grasp a forehead strap in each hand and tighten in small jerking motions.

NOTE

Ensure chin remains seated in chincup so the mask will fit properly.

- l. Shake head quickly from side-to-side and up and down. Adjust mask straps as necessary.

NOTE

- The facepiece should come well up on the forehead but should not extend over the hairline at any point.
- The straps should not cut into the ears.
- The bottom parts of the facepiece should not cut into the throat.
- The nosecup should not interfere with vision or press painfully on the nose.
- For persons wearing combat spectacles, there should be no interference between the nosecup and the bridge of the spectacles.

3-6. Drink Tube Leak Check.

- a. Check internal and external drink tubes for a secure fit at outlet valve feed-thru pipes.
- b. Steady mask and pull canteen coupling out of outlet valve cover.
- c. Grasp outlet valve assembly with thumb at bottom and forefinger at top. Push fore-finger toward mouth to get internal drinking tube end between teeth.

WARNING

If resistance is not felt when blowing into or sucking through the drinking tube, a leak is present and toxic agents could enter the mask. Do not drink. Chemical agents could be swallowed resulting in sickness or death.

- d. Test drinking train for leaks by blowing into tube. If resistance is not felt, drinking train is leaking. Repair mask (see [Section V](#)) or obtain a replacement.
- e. Push coupling firmly back into its socket. The mask may now be checked for leaks around the seal.

3-7. Negative Pressure Check.

- a. Make sure canister is screwed in tight.

WARNING

Collapsing of the mask lens while performing mask negative pressure check may unseat the mask outlet valve disc and cause it to become lodged in the outlet valve body.

- b. Press palm of hand over canister air inlet opening. Breathe in lightly until resistance is felt and there is a slight inward deflection of the mask facepiece and lens. Do not collapse lens. Stop breathing and hold breath for five (5) to ten (10) seconds. If facepiece and lens remain deflected inward, the mask is airtight. If the facepiece and lens do not remain deflected inward, proceed with steps c through f. If the mask rapidly depressurizes go to step g.

NOTE

Leaks around the edge of the mask are usually caused by bad fit. Most leaks may be found by feeling incoming air on the face or locating with a finger.

- c. To stop leaks at forehead, adjust temple and forehead straps.

WARNING

If mask seal failure occurs in a suspected chemical contaminated environment, once mask seal is reestablished, immediately seek medical attention.

- d. To stop leaks at cheeks, adjust neck straps and ensure headpad is centered on high point at back of head.
- e. To stop leaks at throat or under chin, lift mask higher on face, seating chin firmly. Adjusting forehead and neck straps may also help.
- f. The previous procedures should have corrected any leaks in the mask. If leaks are corrected, proceed with the next step. If not, repair mask (see [Section V](#)) or obtain a replacement.
- g. Loss of mask seal due to unseating the outlet valve disc is generally noted by a popping noise followed by a rapid depressurization of the mask. If this condition occurs remain calm, remember your training and proceed with the following steps:
1. Hold your breath and close your eyes.
 2. With one hand hold the facepiece firmly against the face.

NOTE

Steps 3 and 4 may be accomplished by the individual or a buddy.

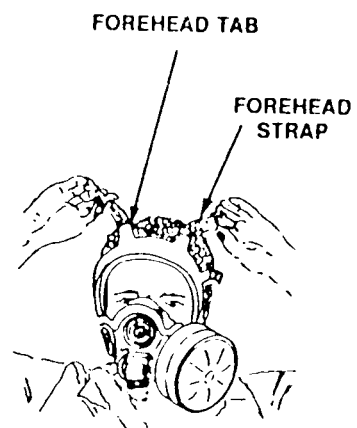
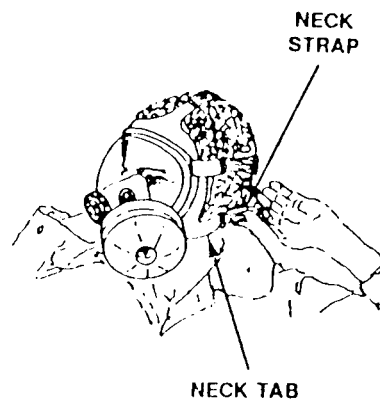
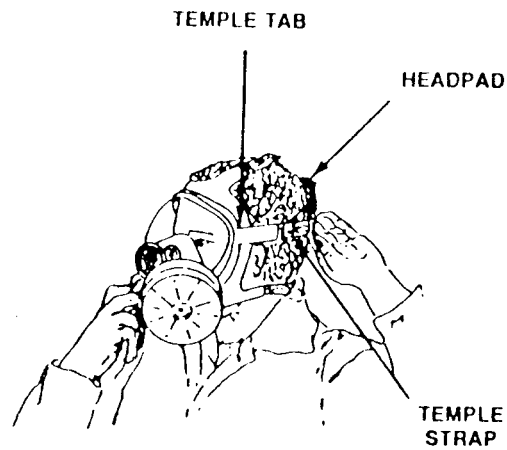


Figure 3-4. Adjusting Straps

3. Pull the bottom tab on the black outlet valve cover down and out to expose the outlet valve disc.
4. Dislodge outlet valve disc from valve body by lightly rubbing valve disc in a circular motion.
5. Clear mask by exhaling.
6. Calmly repeat step b.
7. Open eyes and breathe normally.
8. Replace outlet valve cover.

WARNING

If mask seal failure occurs in a suspected chemical contaminated environment, once mask seal is reestablished, immediately seek medical attention.

3-8. Preparation for Donning.

- a. Loosen mask neck straps by using finger to rotate rear of buckle forward. Grasp mask by outlet valve assembly and remove by pulling down, outward, and up.
- b. Adjust mask neck straps so ends are within 1 inch of buckles.

NOTE

A limited number of early production hoods are not equipped with a neck cord, underarm straps or temple straps. Therefore, they can not be attached to the mask, and must be stowed, donned and doffed as separate items.

- c. If hood furnished is equipped with a neck cord, underarm straps and temple straps, proceed to [paragraph 3-9](#).
- d. Stow hoods not equipped with underarm straps in carrier.

NOTE

To attach hood to mask, the head harness should not be reversed. Return head harness to its normal position.

NOTE

The headharness should only be reversed over the mask facepiece when the mask is being maintained for ready donning during all MOPP conditions. Prolonged stowage of the headharness reversed over the mask facepiece may reduce the elasticity of the head harness.

- e. Install outsert on mask, reverse head harness, and stow mask in carrier.

3-9. Hood Attachment (Hoods Equipped with Underarm Straps Only).

The hood may now be attached to mask. When hood is used, it must be attached to mask at all times. Attach hood to mask as follows:

- a. Unfold hood and loosen neck cord.

- b. Turn hood inside out.
- c. Spread hood flat, with the face opening up.
- d. Unfasten underarm straps and hood temple straps (Figure 3-5).
- e. Place mask face down on hood and insert the canister through face opening.
- f. Fasten hood temple straps over mask temple tabs.
- g. Turn hood right side out.
- h. Stretch hood face opening around top and sides of mask lens.
- i. Ensure hood covers top of the outlet valve cover.
- j. If hood is to be worn in temperatures below 30°F (- 1°C) or above 90°F (32°C), stretch lower part of face opening over outlet valve portion of the assembly so that the outlet valve cover is outside hood.
- k. Raise back of hood up and over face of mask. Reverse head harness over face of mask.
- l. Gather hood and place it inside of the facepiece.
- m. Stow mask and hood in carrier.

3-10. Canister Conversion Option.

The filter canister/air inlet valve assembly connection for the MCU2/P mask is originally on the left hand side of the facepiece. The canister/air inlet valve assembly connection may be reversed with the side voicemitter on the right hand side of the facepiece if required to perform specific duties and directed by higher authority. To reverse positions of the canister/air inlet valve assembly and the side voicemitter, proceed as follows:

- a. Remove canister (if installed).
- b. Gently push center of valve body (Figure 3-7) until it pops through port.
- c. Remove assembly from inside facepiece.
- d. Pull inlet valve body from air deflector post.
- e. With the straight side of carrier shoulder strap D-ring, unscrew and take out side voicemitter retaining ring, voicemitter and gasket (Figure 3-8). Discard gasket.
- f. Push inlet valve body in desired port. Make sure inlet valve body is seated in facepiece side port.
- g. Ensure inlet valve disc is seated in the lower slot (narrowest) of the air deflector post.
- h. From inside facepiece, push air deflector assembly into valve body while holding valve body in port. Head of air deflector post must stick through hole in center of valve body. Side edges of air deflector should be between the raised parallel guides on inside of facepiece.
- i. Rotate valve body using tabs to verify correct seating.
- j. Screw canister into facepiece and hand tighten.

WARNING

Ensure voicemitter is installed with the flange and four pins facing outward. Incorrect installation could result in leakage of toxic agents into the mask causing sickness or death.

WARNING

Install a new gasket under side voicemitter each time it is removed. Reuse of the old gasket could result in leakage of toxic agents causing sickness or death.

- k. Put a new gasket and voicemitter in remaining port. Screw in voicemitter retaining ring (slots outwards) and tighten with carrier D-ring.
- l. Perform Negative Pressure Check ([paragraph 3-7](#)).

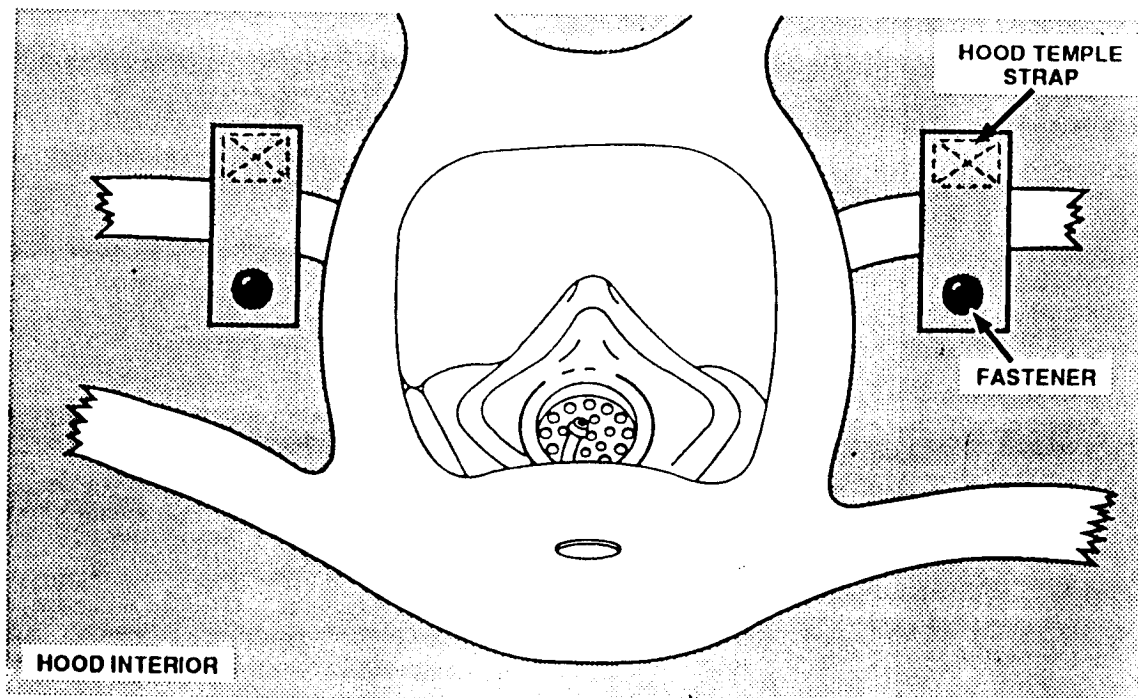


Figure 3-5. Attaching Hood to Mask for Ready Donning

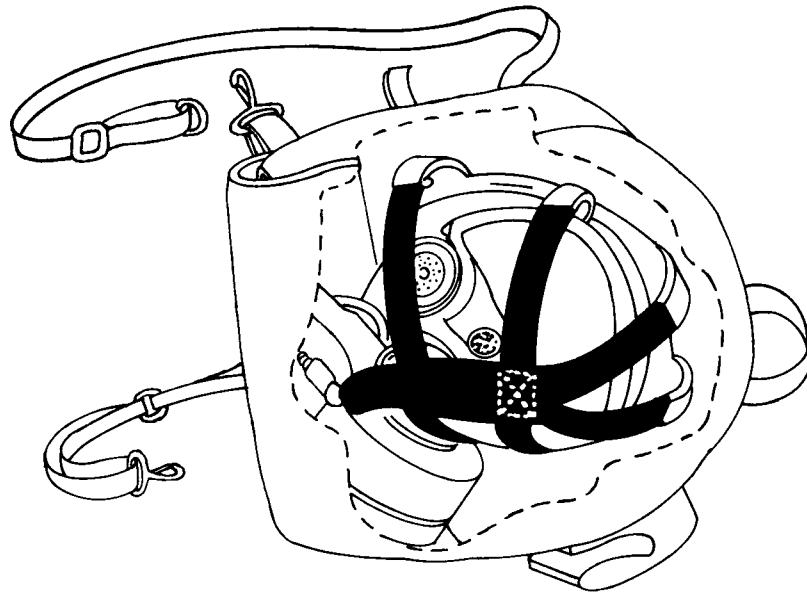


Figure 3-6. MCU-2/P Stowed in Carrier for Ready Donning

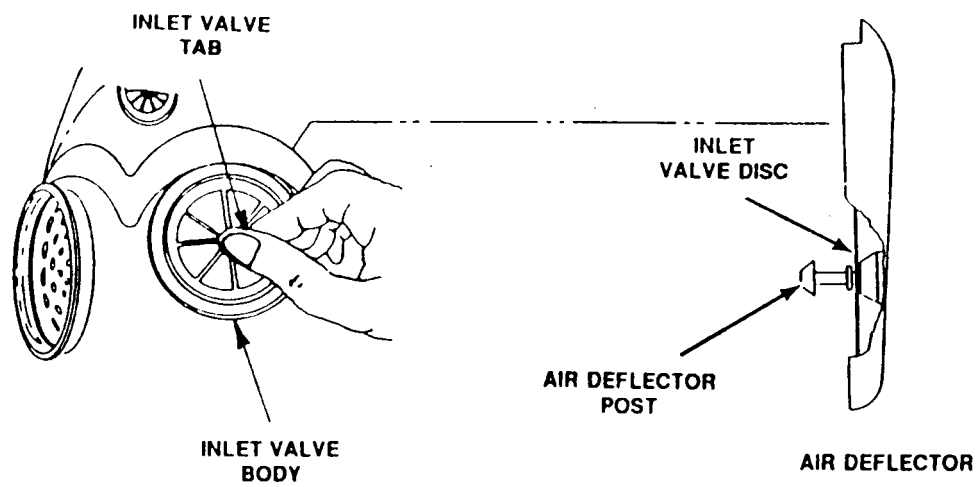


Figure 3-7. Inlet Valve Assembly

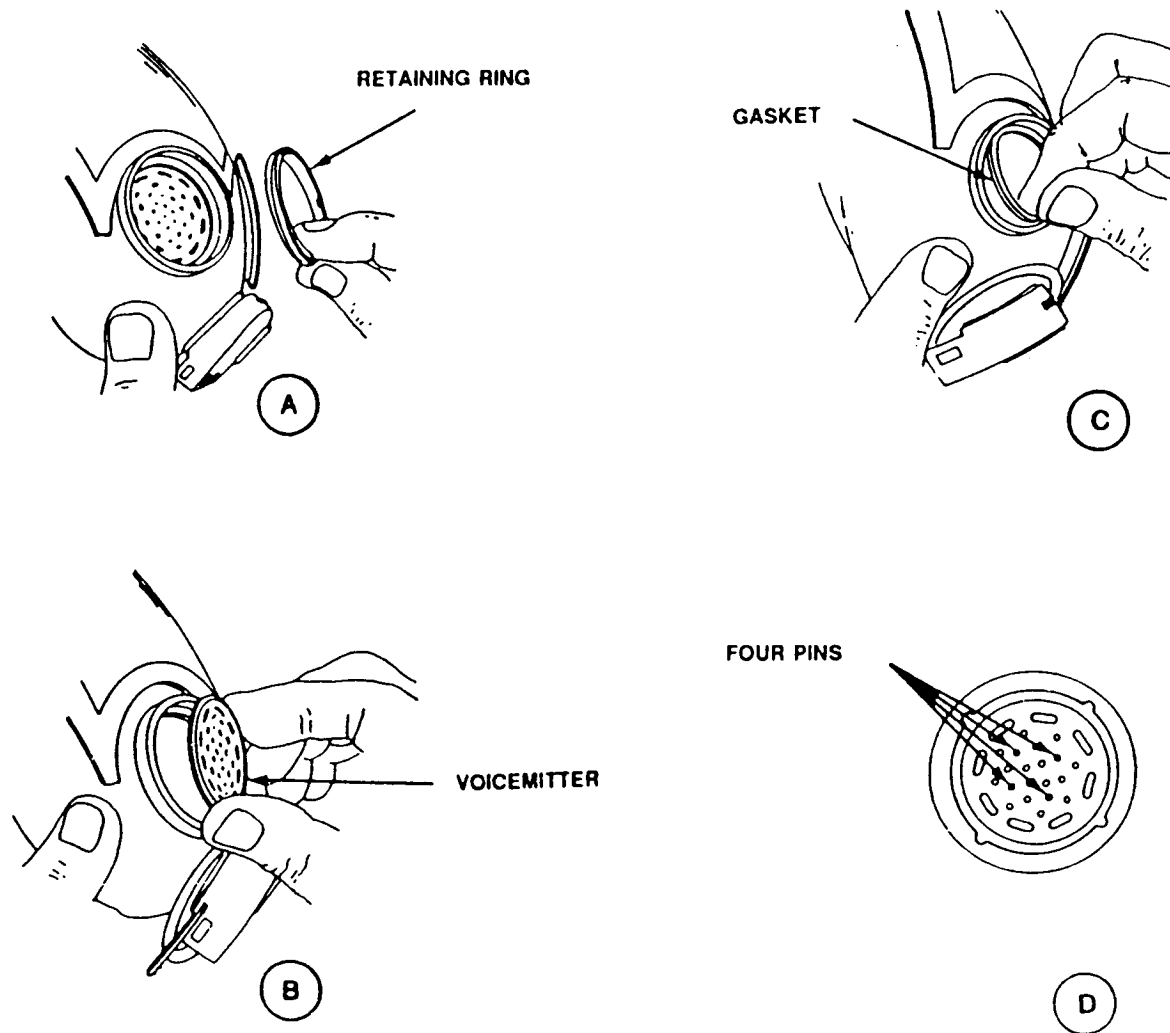


Figure 3-8. Side Voicemail Assembly

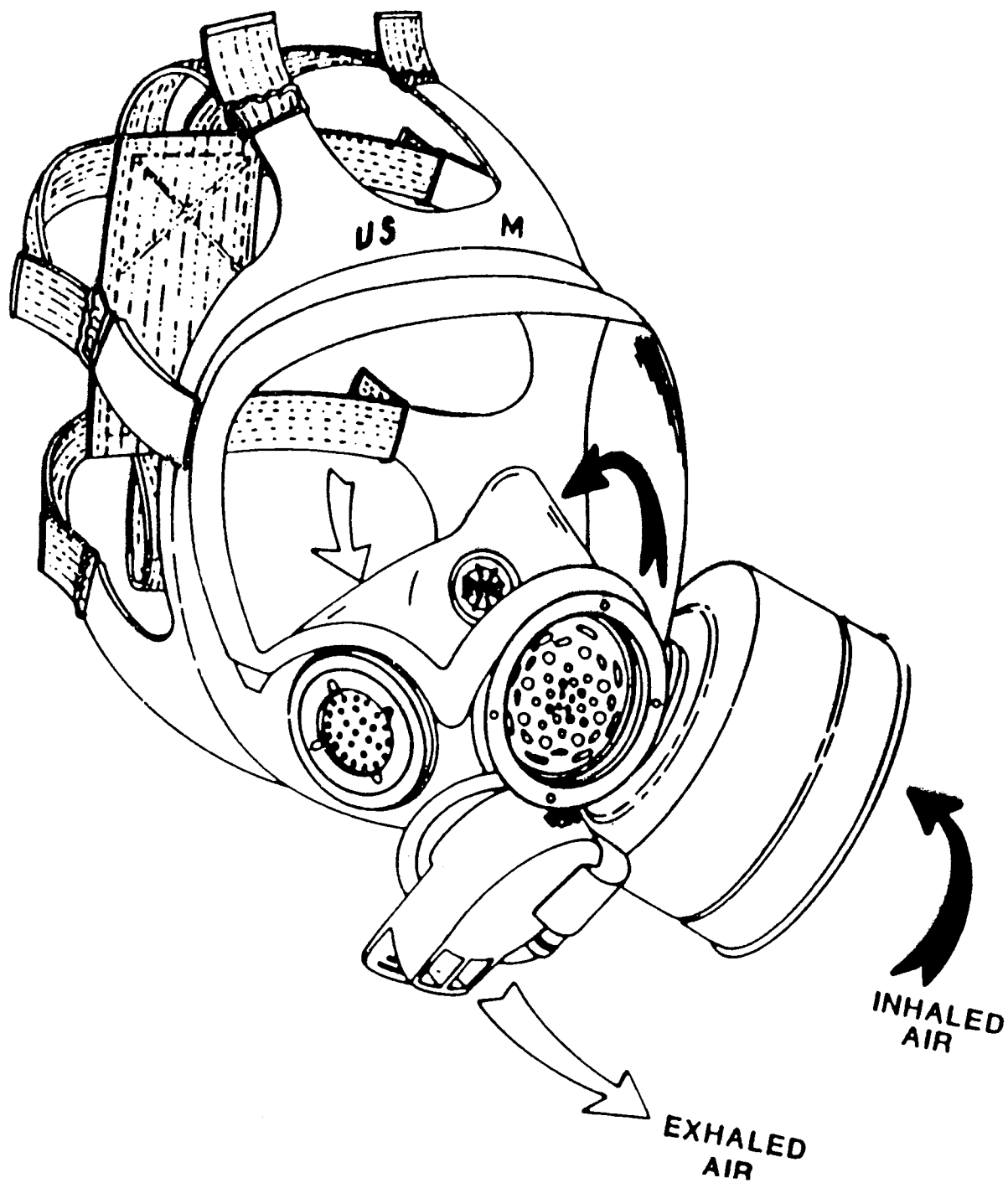


Figure 4-1. MCU-2/P Air Flow

SECTION IV

OPERATION INSTRUCTIONS

4-1. THEORY OF OPERATION (Figure 4-1).

WARNING

The chemical-biological filter canister provided with this mask does not provide protection against ammonia or carbon monoxide fumes.

WARNING

This mask is not an authorized respiratory device for use during industrial chemical spills, and may not provide protection.

WARNING

This mask is not effective in confined spaces where there is not enough oxygen in the air you breathe to support life.

NOTE

During MOPP 1, operational masks must be prefitted before stowing it in the carder. Due to the short time from agent detection to mask donning, the wearer must become an expert in donning the mask and getting an air tight seal in nine seconds with an additional six seconds to adjust the hood when attached. Adjusting the hood will consist of pulling the hood over the head to the shoulders and tightening the neck cord. Attaching the underarm straps is required but will not be considered part of the fifteen second donning time criteria policy (STANAG 2150).

4-2. Inhalation.

Air enters the mask through the canister which filters out toxic agents before air enters the facepiece. The facepiece provides a gastight seal with the face. This allows only filtered air to enter through the inlet valve assembly. The inlet valve assembly consists of a one way valve and an air deflector. The air deflector deflects air across the lens to prevent fogging. The inlet valve assembly also prevents exhaled air from entering the canister. Filtered air, after passing over the lens, is drawn through the nosecup valves. These one-way valves are located in the top portion of the nosecup. The nosecup covers the user's nose and mouth. It is used with the nosecup valves to prevent warm exhaled air from fogging the lens.

4-3. Exhalation.

Exhaled air, from the nose or mouth, is directed through the outlet valve. This oneway valve lets exhaled air escape from the mask and prevents unfiltered air from entering. Exhaled air then passes through the outlet valve cover. This cover is designed to prevent toxic agents from entering the facepiece assembly while the outlet valve is seating. It also serves the purpose of protecting the outlet valve.

4-4. Communications.

- a. Voice Communications. Two voicemitters help the user to talk with other personnel. The front voicemitter transmits the user's voice outside the mask when speaking to other personnel. The side voicemitter also transmits the user's voice outside the mask and is useful when using the telephone or other communications devices.
- b. Radio Communications (MCU-2A/P). The MCU-2A/P mask is provided with a voicemitter/micmitter assembly. This redesign of the MCU-2/P front voicemitter allows for face to face speech and includes the capability to connect a microphone for various radio communication needs.

4-5. Left-Handed Use.

This mask has been designed to permit left-handed use. Conversion (see [paragraph 3-10](#)) consists of switching the location of the canister and inlet valve assembly with the side voicemitter. This conversion does not change the theory of operation of the mask.

4-6. Head Harness.

The head harness has six elastic straps with metal tips. These straps are attached to the facepiece tabs by buckles. A webbing headpad joins the straps together and has a quick-don pull tab sewn to its bottom. The head harness adjusts to provide a means of sealing the mask to the user's face.

4-7. Drinking Tube.

A flexible drinking tube is provided to let the user drink from a canteen. The external part of this drinking tube has a one-way valve to plug into an M1 canteen cap. Water flowing through the valve passes through a tube in the outlet valve assembly to an internal drinking tube inside the mask. When not in use, the outside end of the drinking tube is stored in a pocket of the outlet valve cover.

4-8. Carrier.

The carrier protects the mask from damage when not in use.

4-9. OPERATING PROCEDURES.

WARNING: A serviceable C2 canister must be installed in the MCU-2/P mask prior to use in a toxic chemical or biological environment.

WARNING

With suspected presence of contamination, don your mask immediately. You must put the mask on before you take another breath. Toxic agents could be in the surrounding air and can cause sickness or death.

WARNING

You must check the mask for leaks when it is fitted and each time you put it on. A leaky mask will not protect you from toxic agents which can cause sickness or death.

WARNING

Do not hold mask by canister. A canister which has unscrewed could allow toxic agents to enter the mask which can cause sickness or death.

4-10. Donning Procedures.

Separate donning procedures are included in the following paragraphs for:

- a. Masks with attached hoods (hoods having neck cord, underarm straps and temple tab straps).
- b. Masks with unattached hoods (hoods not having neck cord, underarm straps and temple tab straps).
- c. Mask only.

Follow the applicable procedure for your type mask/hood.

4-11. Donning Procedures for Masks with Attached Hoods.

Don the mask in the following steps.

NOTE

These procedures presume the the following:

- Unapproved eyeglasses and/or contact lenses have been removed and replaced with authorized combat spectacles.
- The mask is in the carrier.
- There are no leaks in the drink tube system.
- An outsert is attached to the mask.

- The head harness is inverted over the front of the mask and the temple and forehead straps are preadjusted for donning.

- a. STOP BREATHING.
- b. Close eyes tightly.
- c. Remove headgear.

CAUTION

Never remove the mask from the carrier by pulling on the outlet valve cover. The cover may tear.

- d. With left hand, grasp carrier flap tab. With a quick firm motion pull outward to open carrier. Reach into carrier with right hand. Grasp mask by front portion of facepiece in area of voicemitter-outlet valve assembly. Withdraw the mask and hood from carrier.

NOTE

Ensure hood falls away from inside of facepiece.

- e. Hold outlet valve assembly in palm of right hand. Using left hand, push forehead hair aside. Place mask on face forcing the chincup very tightly against chin. Pull head harness over head using the quick-don tab ([Figure 1-1](#)).
- f. Grasp a neck strap in each hand and tighten with small jerking motions.

NOTE

Ensure chin remains seated in chincup so the mask will fit properly.

- g. Make sure canister is screwed in tight.
- h. Expel air that has been held in lungs.

WARNING

Collapsing of the mask lens while performing mask negative pressure check may unseat the mask outlet valve disc and cause it to become lodged in the outlet valve body

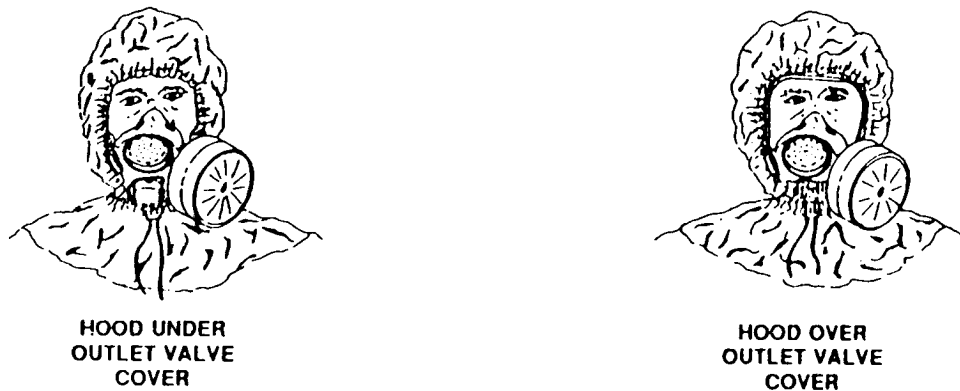


Figure 4-2. Hood Donned

- i. Press palm of hand over canister air inlet opening. Breathe in lightly until resistance is felt and there is a slight inward deflection of the mask facepiece and lens. Do not collapse lens. Stop breathing and hold breath for five (5) to ten (10) seconds. If facepiece and lens remain deflected inward, the mask is airtight.

NOTE

Leaks around the edge of the mask are usually caused by bad fit. Most leaks may be found by feeling incoming air on the face or locating with a finger.

- j. Open eyes and RESUME NORMAL BREATHING.
- k. Pull back of hood over head so that hood covers head. Drape cape over shoulders. Make sure that the cape is under neck cord
- l. Use neck cord fastener to tighten neck cord until hood is held snugly around neck.
- m. Pass straps under arms. Fasten ends to front of cape by pressing the two parts of fastening device together. Adjust straps as necessary to obtain a comfortable fit.
- n. Close carrier.

WARNING

When wearing the mask with the hood over outlet valve (Figure 4-2), do not loosen the straps of the head harness for comfort. When straps are so loosened, the wearer is in danger of suffocation by carbon dioxide as well as being unprotected against toxic agent if it is present.

NOTE

At temperatures below 30°F (-1°C) and above 90°F (32°C), the hood should be under the outlet valve cover.

NOTE

When the hood is positioned over the outlet valve cover the hood fills slightly with air. This inside pressure provides additional protection to the head, neck, and respiratory areas of the user. The effects of a bad fit, careless donning, or beard growth can be minimized by placing the hood over the outlet valve cover. This also gives more protection under windy conditions.

4-12. Donning Procedures for Masks with Unattached Hoods.

Don the mask in the following steps:

NOTE

These procedures presume the following:

- Unapproved eyeglasses and/or contact lenses have been removed and replaced with authorized combat spectacles.
- The mask is in the carrier.
- There are no leaks in the drink tube system.
- An outsert is attached to the mask.
- The head harness is inverted over the front of the mask and the temple and forehead straps are preadjusted for donning.

- a. STOP BREATHING.
- b. Close eyes tightly.
- c. Remove headgear.

CAUTION

Never remove the mask from the carrier by pulling on the outlet valve cover. The cover may tear.

- d. With left hand, grasp carrier flap tab. With a quick firm motion pull outward to open carrier. Reach into carrier with right hand. Grasp mask by front portion of facepiece in area of voicemitter-outlet valve assembly. Withdraw the mask from carrier.
- e. Hold outlet valve assembly in palm of right hand. Using left hand, push forehead hair aside. Place mask on face forcing the chincup very tightly against chin. Pull head harness over head using the quick-don tab (Figure 1-1).
- f. Grasp a neck strap in each hand and tighten with small jerking motions.

NOTE

Ensure chin remains seated in chincup so the mask will fit properly.

- g. Make sure canister is screwed in tight.
- h. Expel air that has been held in lungs.
- i. Press palm of hand over canister air inlet opening. Breathe in lightly until resistance is felt and there is slight inward deflection of the mask facepiece and lens. Do not collapse lens. Stop breathing and hold breath for five (5) to ten (10) seconds. If facepiece and lens remain deflected inward, the mask is airtight.

NOTE

Leaks around the edge of the mask are usually caused by bad fit. Most leaks may be found by feeling incoming air on the face or locating with a finger.

- j. Open eyes and RESUME NORMAL BREATHING.
- k. Remove hood from carrier. Hold hood by bottom rear of cape. Pull hood over head so that the face opening aligns with mask lens.
- m. Pull face opening over canister so that the canister is on the outside of hood.
- n. Place the face opening so that it fits around sides and top of lens.
- o. Remove outsert.
- p. Slip face opening over top outlet valve cover (if it is not already in this position). Fasten hood clip to front of outer garment.
- q. Replace outsert.
- r. Close carrier.

WARNING

When wearing the mask with the hood over outlet valve (Figure 4-2), do not loosen the straps of the head harness for comfort. When straps are so loosened, the wearer is in danger of suffocation by carbon dioxide as well as being unprotected against toxic agent if it is present.

NOTE

At temperatures below 30°F (-1°C) and above 90°F (32°C), the hood should be under the outlet valve cover.

NOTE

When the hood is positioned over the outlet valve cover the hood fills slightly with air. This inside pressure provides additional protection to the head, neck, and respiratory areas of the user. The effects of a bad fit, careless donning, or beard growth can be minimized by placing the hood over the outlet valve cover. This also gives more protection under windy conditions.

4-13. Donning Procedures for Mask Only.

Don the mask in the following steps:

WARNING

With suspected presence of contamination, don your mask immediately. You must put the mask on before you take another breath. Toxic agents could be in the surrounding air and can cause sickness or death.

NOTE

These procedures presume the following:

- Unapproved eyeglasses and/or contact lenses must be removed and replaced with authorized combat spectacles.
- The mask is in the carrier.
- Ensure there are no leaks in the drink tube system.
- An outsert is attached to the mask.
- The head harness is inverted over the front of the mask and the temple and forehead straps are preadjusted for donning.

- a. STOP BREATHING.
- b. Close eyes tightly (and open briefly as necessary to complete donning procedure).
- c. Remove headgear.

CAUTION

Never remove the mask from the carrier by pulling on the outlet valve cover. The cover may tear.

- d. With left hand, grasp carrier flap tab. With a quick firm motion pull outward to open carrier. Reach into carrier with right hand. Grasp mask by front portion of facepiece in area of voicemitter-outlet valve assembly. Withdraw mask from carrier.
- e. Hold outlet valve assembly in palm of right hand. Using left hand, push forehead hair aside. Place mask on face forcing chincup very tightly against chin. Pull head harness over head using the quick-don tab (Figure 1-1).

NOTE

Both hands may be used.

- f. Grasp a neck strap in each hand and tighten with small jerking motions.

NOTE

Ensure chin remains seated in chin cup so the mask will fit properly.

- g. Make sure canister is screwed in tight.
- h. Expel air that has been held in lungs.

WARNING

Collapsing of the mask lens while performing mask negative pressure check may unseat the mask outlet valve disc and cause it to become lodged in the outlet valve body.

- i. Press palm of one hand over canister opening. Inhale to determine whether an airtight seal of mask against face has been obtained. If mask collapses against the face while inhaling and remains collapsed while you hold your breath, it is leak-tight. If mask doesn't collapse, check for hair or other material between mask seal and the face. Tighten straps if necessary and recheck.

NOTE

Leaks around the edge of the mask are usually caused by bad fit. Most leaks may be found by feeling incoming air on the face or locating with a finger.

- j. Open eyes and RESUME NORMAL BREATHING.
- k. Close carrier.

4-14. Doffing Procedures for Uncontaminated Equipment

Separate doffing procedures are included in the following paragraphs for:

- a. Masks with attached hoods (hoods having neck cord, underarm straps and temple tab straps).
- b. Masks with unattached hoods (hoods not having neck cord, underarm straps and temple tab straps).
- c. Mask only.

Follow the applicable procedure for your type.

4-15. Doffing Procedures for Masks with Attached Hoods.

- a. Unfasten underarm straps.
- b. Loosen neck cord by sliding fastener to end of cord.
- c. Pull back of cape forward over head and leave hood suspended from front of mask.
- d. Loosen mask neck straps. Grasp mask by outlet valve assembly and remove by pulling down, outward, and up.

NOTE

The headharness should only be reversed over the mask facepiece ([Figure 3-6](#)) when the mask is being maintained for ready donning during all MOPP conditions. Prolonged stowage of the headharness reversed over the mask facepiece may reduce the elasticity of the headharness.

- e. Reverse head harness over mask facepiece.
- f. Shake or wipe any moisture or frost accumulations from inside of hood and mask.
- g. Clean and dry mask in accordance with recommended service procedures or Navy planned maintenance system (PMS) requirements as indicated in [chapter 5](#).
- h. Gather hood and place it on inside of facepiece.
- i. Stow mask and hood in carrier.

4-16. Doffing Procedures for Masks with Unattached Hoods.

Doffing Procedures for Masks with Attached Hoods.

- a. Unfasten hood clip attached to clothing.
- b. Pull back of cape forward over head and separate hood from front of mask.
- c. Shake or wipe any moisture or frost accumulations from inside of hood. Place hood in carrier.
- d. Loosen mask neck straps. Grasp mask by outlet valve body and remove by pulling down, outward, and up.

NOTE

he headharness should only be reversed over the mask facepiece ([Figure 3-6](#)) when the mask is being maintained for ready donning during all MOPP conditions. Prolonged stowage of the headharness reversed over the mask facepiece may reduce the elasticity of the headharness.

- e. Reverse head harness over mask facepiece and shake or wipe any moisture or frost accumulations from inside of mask.
- f. Clean and dry mask in accordance with recommended service procedures or Navy planned maintenance system (PMS) requirements as indicated in [chapter 5](#).
- g. Stow mask in carrier.

4-17. Doffing Procedures for Mask Only.

- a. Loosen mask neck straps by rotating buckles forward. Grasp mask by outlet valve body and remove by pulling down, outward, and up.
- b. Install outsert.

NOTE

The headharness should only be reversed over the mask facepiece ([Figure 3-6](#)) when the mask is being maintained for ready donning during all MOPP condi-

tions. Prolonged stowage of the headharness reversed over the mask facepiece may reduce the elasticity of the headharness.

- c. Reverse head harness over mask facepiece lens and shake or wipe any moisture from inside mask.
- d. Clean and dry mask in accordance with recommended service procedures or Navy planned maintenance system (PMS) requirements as indicated in [chapter 5](#).
- e. Stow mask in carrier.

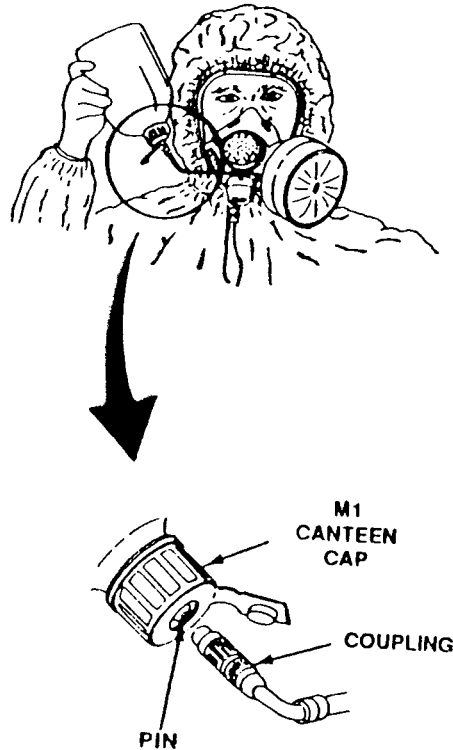


Figure 4-3. Drinking Tube Use

4-18. Accessory Use.

4-19. Use of Mask Drinking Tube.

To use the mask drinking tube ([Figure 4-3](#)) proceed as follows:

NOTE

The outlet valve cover must be outside hood to obtain access to the drinking tube.

- a. Steady mask and pull drink tube coupling out of outlet valve cover.
- b. Take out canteen and flip open cover on M-1 canteen cap.
- c. Push coupling into canteen cap so that pin enters coupling.

- d. Grasp outlet valve assembly with thumb at bottom and forefinger at top. Push forefinger toward mouth to get internal drinking tube end between teeth.

NOTE

Water may leak into mask if mouth is taken off drinking tube.

- e. Raise canteen and drink. After several swallows, stop sucking and allow air in mask to enter canteen. This will prevent canteen from collapsing. Repeat drinking procedure as required.
- f. Disconnect drinking tube by blowing into drinking tube while twisting and pulling coupling out of canteen.
- g. Push coupling firmly back into its socket.
- h. Flip down cover on canteen cap and stow canteen.
- i. Return hood to original position (if required).

4-20. Use of Mask Waterproofing Bag.

To use the mask waterproofing bag (Figure 4-4) proceed as follows:

WARNING

Do not store food in the waterproofing bag. Possible toxic effects could result.

CAUTION

Do not store your mask in the waterproofing bag for more than 24 hours. Moisture and off-gasing buildup in the bag may damage the canister.

- a. Pull open carrier flap, and pocket flap. Take out waterproofing bag envelope.
- b. Open waterproofing bag envelope. Take out waterproofing bag and envelope containing rubber bands.
- c. Put mask in bag with front voicemitter toward open end of bag.
- d. Gather open end of bag near to end of mask. Squeeze bag to force out air. Twist open end of bag tightly. Fold twisted part back on itself. Take out rubber band. Wrap it around end of bag as many times as possible.
- e. Put bag in carrier with fold toward front of carrier.
- f. Close carrier flap.

4-21. Non-Use of Mask Waterproofing Bag.

When use of the waterproofing bag is no longer required proceed as follows:

- a. Pull open carrier flap and pull out bag.
- b. Remove mask from bag.

- c. Fold bag neatly. Place bag in waterproofing bag envelope.
- d. Put waterproofing bag envelope in carrier pocket and close flap.

4-22. Wearing of Mask Carrier.

The mask carrier may be worn in a variety of positions (Figure 4-5). The paragraphs that follow illustrate three of these.

4-23. Shoulder Carry Position.

- a. Hold carrier against left side with carrier flap pile fastener towards body. Pass shoulder strap around back and over right shoulder. Fasten D-ring to hook sewn on top inside corner. Adjust shoulder strap so carrier hangs at waist.
- b. Route waist strap towards back, around waist, and connect strap hook to O-ring on carrier. Adjust strap for a close secure fit.

4-24. Leg Carry Position (with Web Belt).

- a. Roll up shoulder strap. Put in shoulder strap pocket.
- b. Hold carrier against left hip with carrier flap pile fastener towards leg. Fasten front hook to web belt. Fasten rear hook (on short wide strap) to web belt.
- c. Route waist strap back, around left leg (a double wrap may be required for smaller leg), and connect strap hook to O-ring on carrier. Adjust strap for a close secure fit.

4-25. Leg Carry Position (without Web Belt).

- a. Hold carrier against left hip with carrier flap pile fastener towards leg. Pass shoulder strap around waist. Fasten D-ring to hook sewn on top inside corner. Adjust strap so carrier is snug around waist.
- b. Route waist strap back, around left leg (a double wrap may be required for smaller leg), and connect strap hook to O-ring on carrier. Adjust strap for a close secure fit.

4-26. Cold Weather Operation.

General instructions that must be followed in cold weather include the following:

- a. Before entering a warm area from freezing temperatures, remove frost and snow from mask.

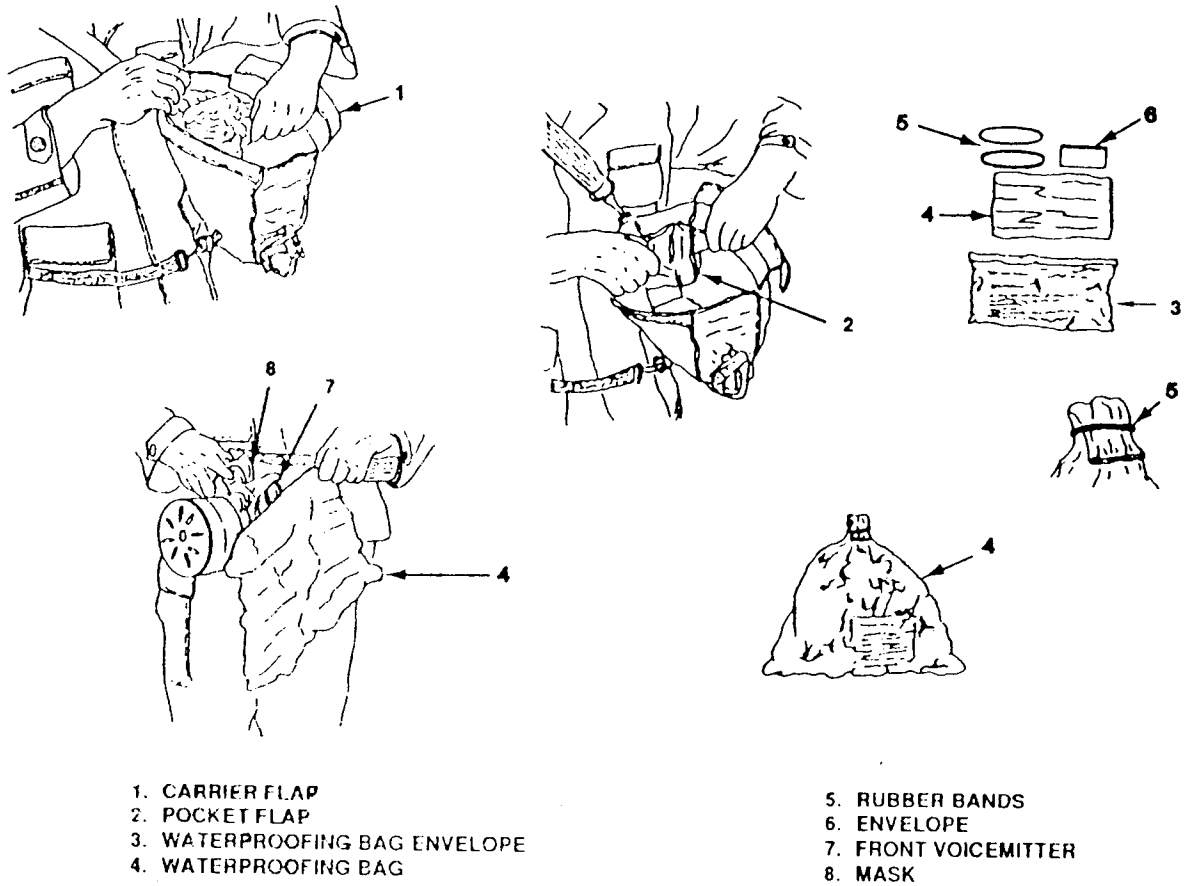
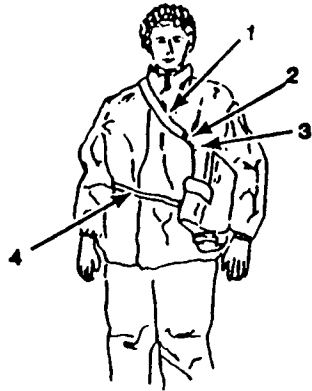
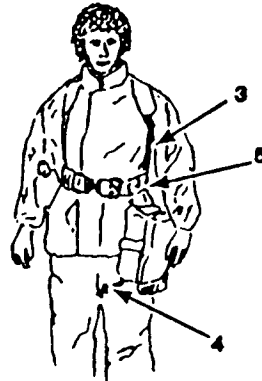


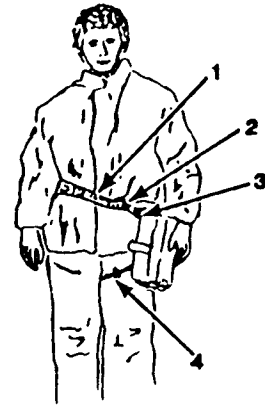
Figure 4-4. Waterproofing Bag Use



**SHOULDER
CARRY POSITION**



**LEG CARRY
POSITION
(WITH WEB BELT)**



**LEG CARRY
POSITION
(WITHOUT WEB BELT)**

1. SHOULDER STRAP
2. D-RING
3. FRONT HOOK
4. WAIST STRAP
5. REAR HOOK
6. SHOULDER STRAP POCKET
7. WAIST STRAP HOOK
8. PILE FASTNER
9. ACCESSORY POCKET
10. CARRIER FLAP PULL TAB
11. INSIDE TOP POCKET
12. LARGE INSIDE POCKET
(FLUSH WITH SIDE SHOWN)
13. SMALL D-RING
14. O-RING

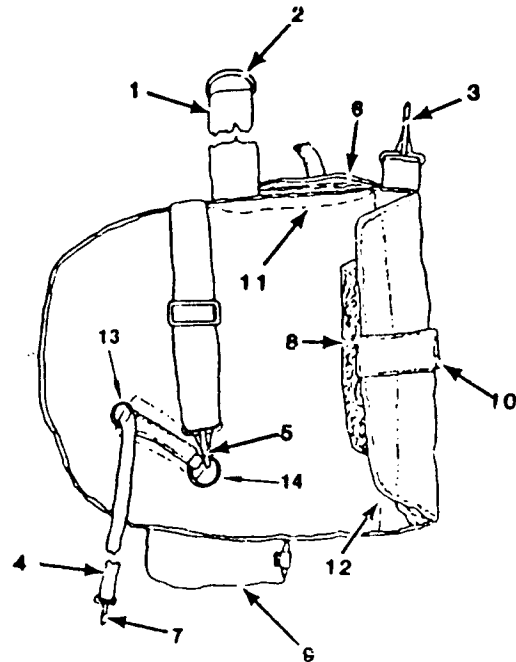


Figure 4-5. Mask Carrier Wear

- b. Dry mask with a clean cloth, in a warm indoor area. Carefully dry outlet and nosecup valves.

4-27. Donning and Wearing Mask in Cold Weather.

Follow the usual procedures when donning or wearing the mask in cold weather, but keep in mind the following points:

- a. Do not breathe out forcefully or the facepiece will steam up.
- b. If outlet valve disc sticks to valve seat, place finger against the center of the outlet valve cover. Depress cover inward to make contact with disc. Move finger in a circular motion while exhaling slowly. IF this does not free disc, pull up the outlet valve cover. Massage disc lightly with one finger while exhaling slowly (Figure 4-6). Massage until valve disc functions properly.

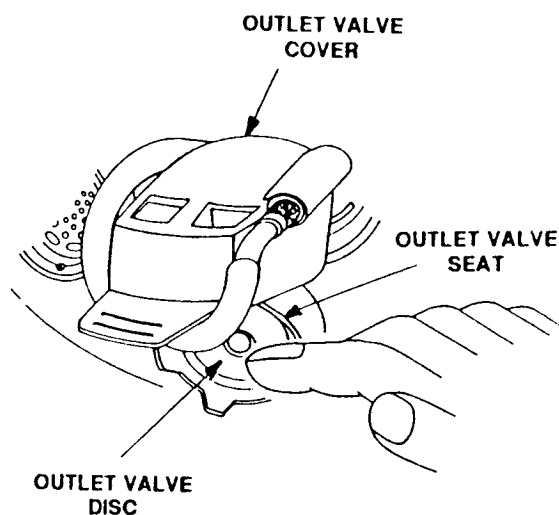


Figure 4-6. Freeing Stuck Outlet Valve Disc

WARNING

If you become overheated in very cold weather, do not remove your mask outdoors until your head cools and any sweat has dried. Frostbite may result if the mask is removed while your face is still wet.

NOTE

Massage valve disc while exhaling only. This will help to free the stuck outlet valve disc.

4-28. Doffing Mask in Cold Weather.

To remove mask in cold weather proceed as follows:

- a. Brush any ice or snow from mask before taking it off.

- b. After unmasking, shake ice buildup from mask.
- c. Clean and dry mask in accordance with recommended service procedures or Navy planned maintenance system (PMS) requirements as indicated in [chapter 5](#).
- d. Stow mask in carrier (refer to [Figure 3-6](#)).

4-29. Temporary Storage.

CAUTION

Keep the carrier free of grit and other dirt that might scratch the lens or clog the valves.

- a. Stow waterproofing bag in large inside pocket at front of carrier ([Figure 4-7](#)).
- b. Install outsert before stowing mask.
- c. Stow decontamination kit, if furnished, in outside side pocket.
- d. If required, stow hood attached to mask inside carrier.

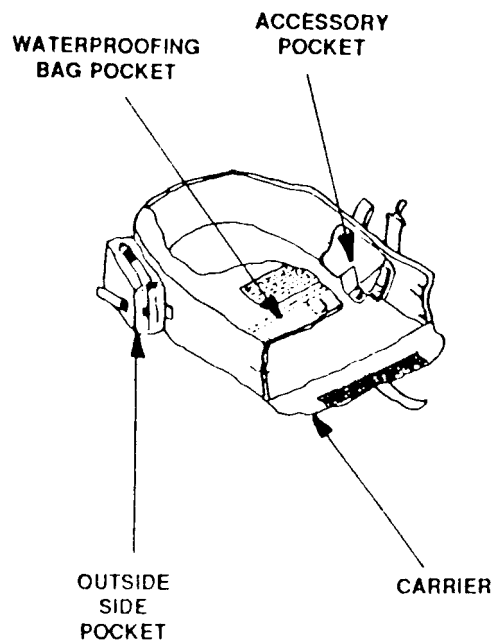


Figure 4-7. Carrier Stowing Pockets

- e. Stow dust cover and combat spectacles, if furnished, in carrier inside accessory pocket.

CAUTION

Check that the mask is dry, free of oil and solvents before stowing. Oil or solvents will damage the mask lens.

CAUTION

Do not store other items on top of the mask or place unauthorized items in the carrier. Damage to the mask may result.

- f. Stow mask in carrier, (refer to [Figure 3-6](#)).

CAUTION

Dampness will reduce the life of the canister. Be sure the mask is stored in a dry place.

CAUTION

Do not store mask in direct sunlight, or in hot stuffy areas. Damage to the mask will result.

- g. Place carrier in a cool, dry place.

4-30. LIMITATIONS.

WARNING

The chemical-biological filter canister provided with this mask does not provide protection against ammonia or carbon monoxide fumes.

WARNING

This mask is not an authorized respiratory device for use during industrial chemical spills, and may not provide protection.

WARNING

This mask is not effective in confined spaces where there is not enough oxygen in the air you breathe to support life.

4-31. DECONTAMINATION.

- a. In the field, to limit the amount of chemical agent absorbed into the rubber components of mask, the mask

and hood should be decontaminated as soon as practical after contamination occurs. Decontaminate with M291 decontamination kit. See NSTM SS010-AA-MO-010.

- b. When mask is serviced in a CCA, the outsert may be decontaminated for reuse IAW NSTM Chapter 470.

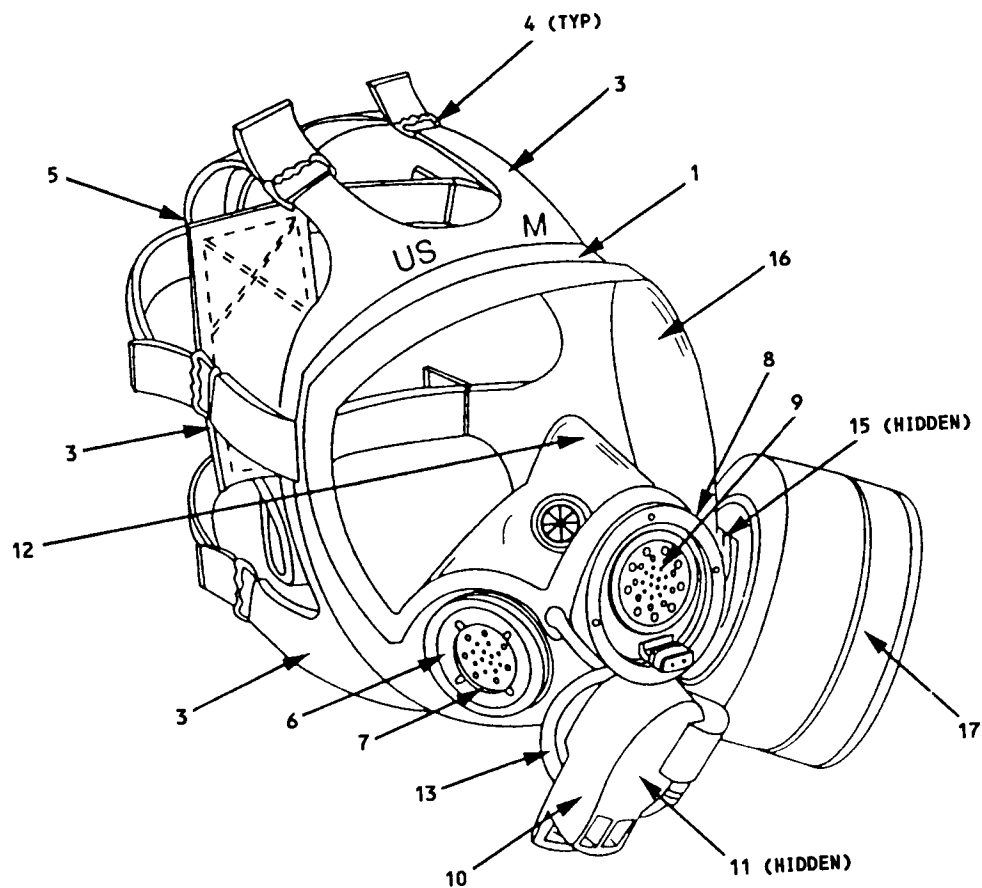


Figure 5-1. Mask Inspection (Sheet 1 of 3)

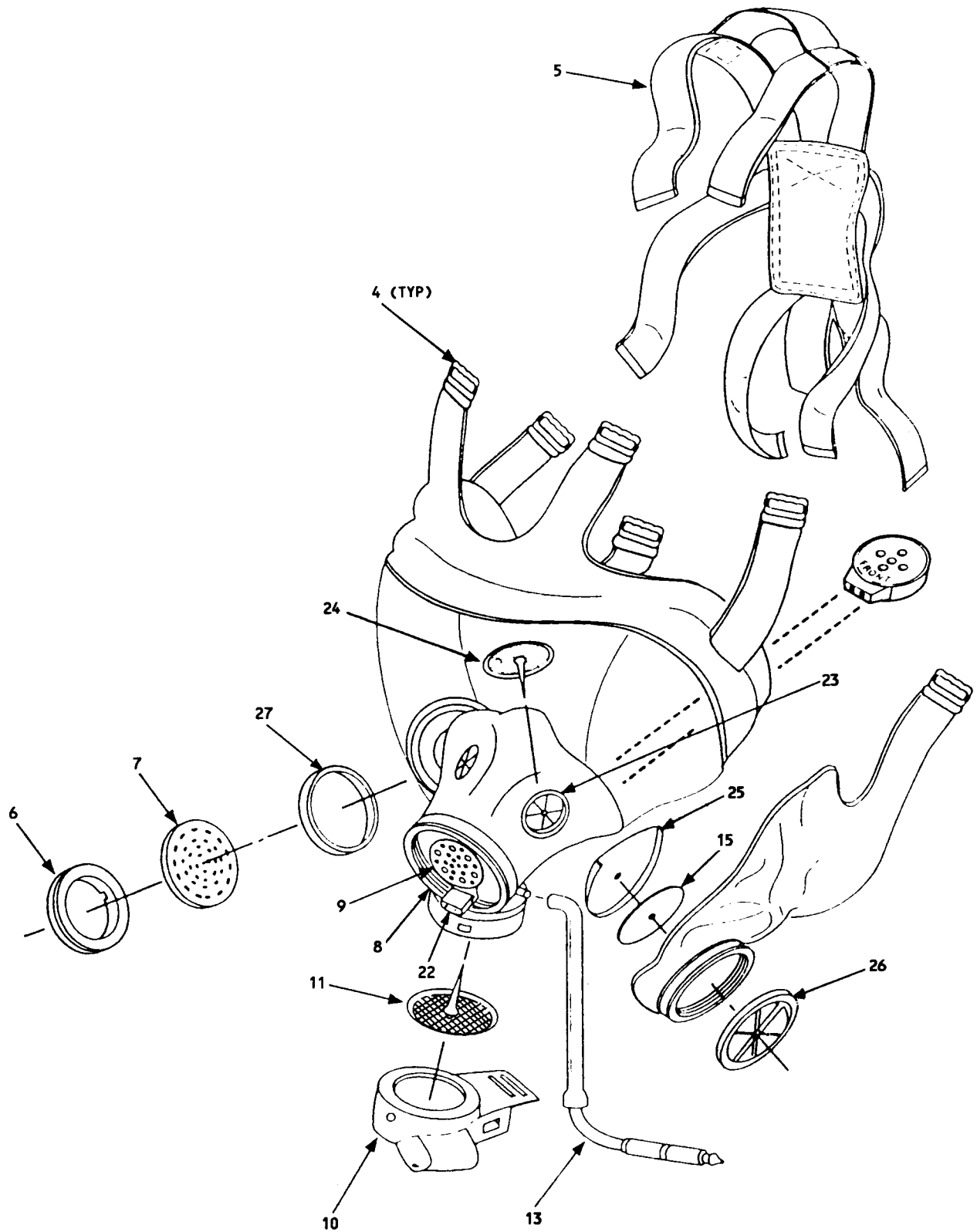


Figure 5-1. Mask Inspection (Sheet 2 of 3)

SECTION V

MAINTENANCE INSTRUCTIONS

5-1. OPERATIONAL CHECKOUT.

Once the MCU2/P mask is issued, all inspection and preventive maintenance checks become the responsibility of the user. Corrective actions should only be evaluated or accomplished by, or under the supervision of, an individual qualified in MCU-2/P maintenance and corrective action procedures.

5-2. INSPECTION AND PREVENTIVE MAINTENANCE.

- a. This section contains the procedures and instructions necessary to perform preventive maintenance checks and services. [Table 5-1](#) provides a list of items to be checked, inspection procedures and a corrective action or a referral to the Repair and Replacement section of this manual. Refer to [Figure 5-1](#) while using this table. Numbers in parentheses () in [Table 5-1](#), refer to the similar numbered items on [Figure 5-1](#) (3 sheets).
- b. Follow MCU-2/P inspection procedures provided by planned maintenance system (PMS) maintenance requirement card (MRC). Mask maintenance or corrective action procedures shall be in accordance with guidance provided in [paragraph 5-1](#) and [table 5-1](#).
- c. Masks will be inspected:
 1. Upon receipt, (IAW [paragraphs 3-2](#) and [3-3](#)), by Damage Control Officer's Representative.
 2. Upon issue to the individual by the individual.
 3. Every twelve months during peacetime.
 4. Every seven days during wartime.

5-3. REPAIR AND ADJUSTMENT.

There are no parts of the MCU-2/P mask which require repair. All repair procedures are accomplished by replacement of defective parts in accordance with [paragraph 5-9](#).

5-4. DISASSEMBLY.

What limited disassembly is required by the MCU-2/P mask is addressed in the Repair or Replacement section of this manual (see [paragraph 5-9](#)).

Table 5-1. Inspection and Preventive Maintenance Checks

Item	Inspect for	Corrective Action
NOTE		
Take off outsert before inspecting mask.		
Facepiece (1)	Cracks, tears, or deterioration and separation between silicone, rubber and the metal parts of the mask lens.	Replace mask and condemn facepiece if cracked, torn, deteriorated, or separated.
Faceseal (Figure 5-9) (2)	Cracks or tears. Run finger over seal to inspect for nicks or surface irregularities. Faceseal must be soft, smooth and pliable.	Replace mask and condemn facepiece if cracked, torn, nicked, or has surface irregularities.

Table 5-1. Inspection and Preventive Maintenance Checks - Continued

Item	Inspect for	Corrective Action
Forehead, Temple, and Nock Tabs (3)	Nicks or tips on ends of tabs where buckles connect. Run a finger around curves where tabs join facepiece to check for nicks.	Replace mask and condemn facepiece if ripped or nicked around the edges.
Buckles (4)	Bonds, cracks or looseness where molded into the facepiece tabs. Pull on head harness straps. Make sure the buckles hold the strap tight.	Replace mask and condemn facepiece if cracked, bent, loose or will not hold straps tight.
Head Harness (5)	Tears, surface dirt, or mildew. Pull straps to make sure they have not lost their elasticity.	Replace if straps are torn, broken, or have lost their elasticity. Refer to paragraph 5-11 . Clean off surface dirt or mildew with a stiff bristle brush.
Side Voicemitter Retaining Ring (6)	Corrosion or looseness.	Replace if corroded. Tighten if loose. Refer to paragraph 5-14 .
Side Voicemitter (7)	Dents, punctures, or cracks. The four pins in the center face toward the outside of mask.	Replace if dented, punctured, or cracked. Remove and correctly reinstall if four pins are not facing outward. Re-tighten if loose in accordance with paragraph 5-14 . Replace gasket (27) only when deteriorated or when performing the canister conversion option in paragraph 3-10 .
Front Voicemitter Retaining Ring (8)	Tightness using the tips of two fingers on the flat part of the ring.	Replace mask if loose.
Front Voicemitter (9)	Dents, punctures, or cracks. The four pins in the center face toward the outside of mask.	Replace mask if punctured, dented, cracked or 4 pins in center of voicemitter are not facing outward
Outlet Valve Cover (10)	Cracks, rips and general cleanliness inside and out.	Replace if cracked, ripped, or it will not seat firmly on outlet valve body. Refer to paragraph 5-16 Wipe away any dirt or moisture on cover with a soft, dry, clean cloth.
Black Outlet Valve Disc With Plastic Mesh Support Screen Assembly	Curls, nicks, rips, dirt, or moisture on the black outlet valve disc with plastic mesh support screen. Turn disc assembly to make sure it is not stuck to the valve seat. Smooth disc assembly so that it lies flat on the valve seat. Put cover(10) back over outlet valve disc assembly. Make sure cover is seated firmly.	Replace if outlet valve disc is not black, screen is torn or missing, valve disc is curled, nicked, ripped, cannot be cleaned, or will not seat properly, refer to paragraph 5-19 .
Nosecup (12)	Cracks or cuts, and that it is sealed around the outlet valve flange and securely held around the front voicemitter housing. Also inspect each nosecup valve body (23) for separation from the nosecup. Ensure each nosecup valve disc (24) is not cut or torn. Turn the discs with the tip of a finger to ensure they are not stuck on valve seats.	Replace mask and condemn facepiece if nosecup is cracked or cut. If the valve bodies (23) have pulled away from nosecup use firm pressure to reset them in the nosecup. If the nosecup is not sealed around the outlet valve flange, push the nosecup back over the flange. Replace nosecup valve discs (24) that are curled or torn. Refer to paragraph 5-25 .

Table 5-1. Inspection and Preventive Maintenance Checks - Continued

Item	Inspect for	Corrective Action
External Drinking Tube (13)	Cracked or cut rubber. Dented, cracked or loose coupling.	Replace if cracked or cut, or if coupling is cracked, dented, or loose. Refer to paragraph 5-28 .
Internal Drinking Tube (14)	Cracks, cuts, and to see if it is loose on the feed-thru pipe.	Replace if cracked, cut or loose. Refer to paragraph 5-31 .
Inlet Valve Disc (15)	Curls or tears. Turn disc to make sure it is not stuck to the inlet valve body seat (26) or the air deflector (25). Ensure inlet valve tabs on inlet valve body are facing outward.	Replace disc if curled or torn. Reinstall inlet valve body if inlet valve tabs are not facing outward. Refer to paragraph 5-24 .
Lens (16)	Stains or punctures; any signs of separation between the mask lens and face- piece.	Replace mask and condemn facepiece if punctured or so badly stained that normal vision is prevented or if the lens has separated from the facepiece.
Canister (17)	Cracks, dents, or holes around the seams, dirt clogging the air intake and for damaged threads.	Replace if cracked or dented on a seam, dented deeper than 1/4 inch, if it has holes, threads are damaged, or air intake is clogged with dirt.
Protective Hood (18)	Damage.	Replace if there are more than two pinholes in any one panel, or torn, ripped, or if rubber coating is sticky or scuffed off.
Carrier (19)	Damage, wear, missing straps or fasteners.	Repair if possible or replace.
Waterproofing Bag (20)	Damage.	Replace if required.
Outsert (21)	Scratches, damaged, or missing rubber strap (28), damaged or missing outsert clip(s) (29).	Replace the rubber strap (28) if broken or missing. Refer to paragraph 5-35 . Replace outsert if so badly scratched that normal vision is impaired or an outsert clip (29) is broken or missing.
Voicemitter/ Micmitter (22)	Dirt, bends, cracks, or loose.	Clean if dirty. Replace mask if bent, cracked or loose.

NOTE

Install outsert before re-stowing mask

5-5. CLEANING.**CAUTION**

Do not use solvents of any kind to clean this mask. Solvents could cause damage to the mask.

CAUTION

Do not let the canister get wet. The canister shall be replaced if it becomes wet.

CAUTION

Do not place mask in boiling water. Lens damage will result.

CAUTION

Do not dry-wipe lens. Lens damage could result.

NOTE

Clean the mask and accessories with mild liquid detergent and warm water to remove any dirt.

NOTE

When the mask requires cleaning and sanitizing, use only clean fresh water.

5-6. Cleaning Mask and Accessories.

5-6.1. Cleaning Mask. Follow MCU-2/P cleaning, disinfecting, and sanitizing procedures provided by the applicable planned maintenance system (PMS) maintenance requirement card (MRC) for surface ships and MRC(S) for submarines. To clean mask carrier see [paragraph 5-8](#).

5-6.2. Cleaning Mask Hood and Outsert. The MCU2/P mask hood and outserts may be cleaned by performing the following procedures:

- a. Remove outsert from mask.
- b. Separate hood from mask.
- c. Immerse hood and outsert in mild liquid detergent and warm water. Agitate to clean thoroughly.
- d. Use clear warm water to rinse all parts. Move parts around quickly while rinsing to remove all detergent.
- e. Dry all parts using a soft, dry cloth. Shake and dry again.
- f. Hang up and allow to air dry.
- g. Attach hood (if applicable).
- h. Replace outsert.

NOTE

The headharness should only be reversed over the mask facepiece ([Figure 3-6](#)) when the mask is being maintained for ready donning during all MOPP conditions. Prolonged stowage of the headharness reversed over the mask facepiece may reduce the elasticity of the headharness.

- i. Stow mask in carrier ([Figure 3-6](#)).

5-7. Sanitizing Mask Drinking Tube.

To sanitize mask drinking tube, perform the following steps:

- a. Prepare sanitizing solution by mixing two tablespoons of liquid chlorine bleach or 1 teaspoon of organic laundry bleach per gallon of fresh warm water.
- b. Fill canteen with sanitizing solution. Put on canteen cap and shake canteen.
- c. Remove drink tube coupling from mask outlet valve cover.
- d. Flip up canteen cap cover. Push mask drinking tube coupling in canteen cap. Ensure that pin in cap enters coupling.
- e. Turn up canteen. Squeeze its sides to force liquid through drinking tube. Repeat until all liquid is used.
- f. Fill canteen with clean fresh water.
- g. Repeat steps d thru f until sanitizing solution is removed.
- h. Disconnect coupling from canteen. Flip down canteen cap cover.
- i. Replace drink tube in mask coupling outlet valve cover.

NOTE

The headharness should only be reversed over the mask facepiece ([Figure 3-6](#)) when the mask is being maintained for ready donning during all MOPP conditions. Prolonged stowage of the headharness reversed over the mask facepiece may reduce the elasticity of the headharness.

- j. Stow mask in carrier.

5-8. Cleaning Carrier.

To clean the carrier, brush any dirt or grit from carrier using a brush dipped in clean cool water.

5-9. REPAIR OR REPLACEMENT.

Maintenance actions in this section are limited to replacement of defective mask parts. Only those parts that may be replaced are addressed. Defective parts other than those listed are cause for mask replacement.

5-10. Head Harness Replacement.

([Figure 5-2](#))

5-11. Removal.

To remove the head harness, work harness straps out of buckles. Take out tips at an angle.

5-12. Installation.

To install the head harness proceed as follows:

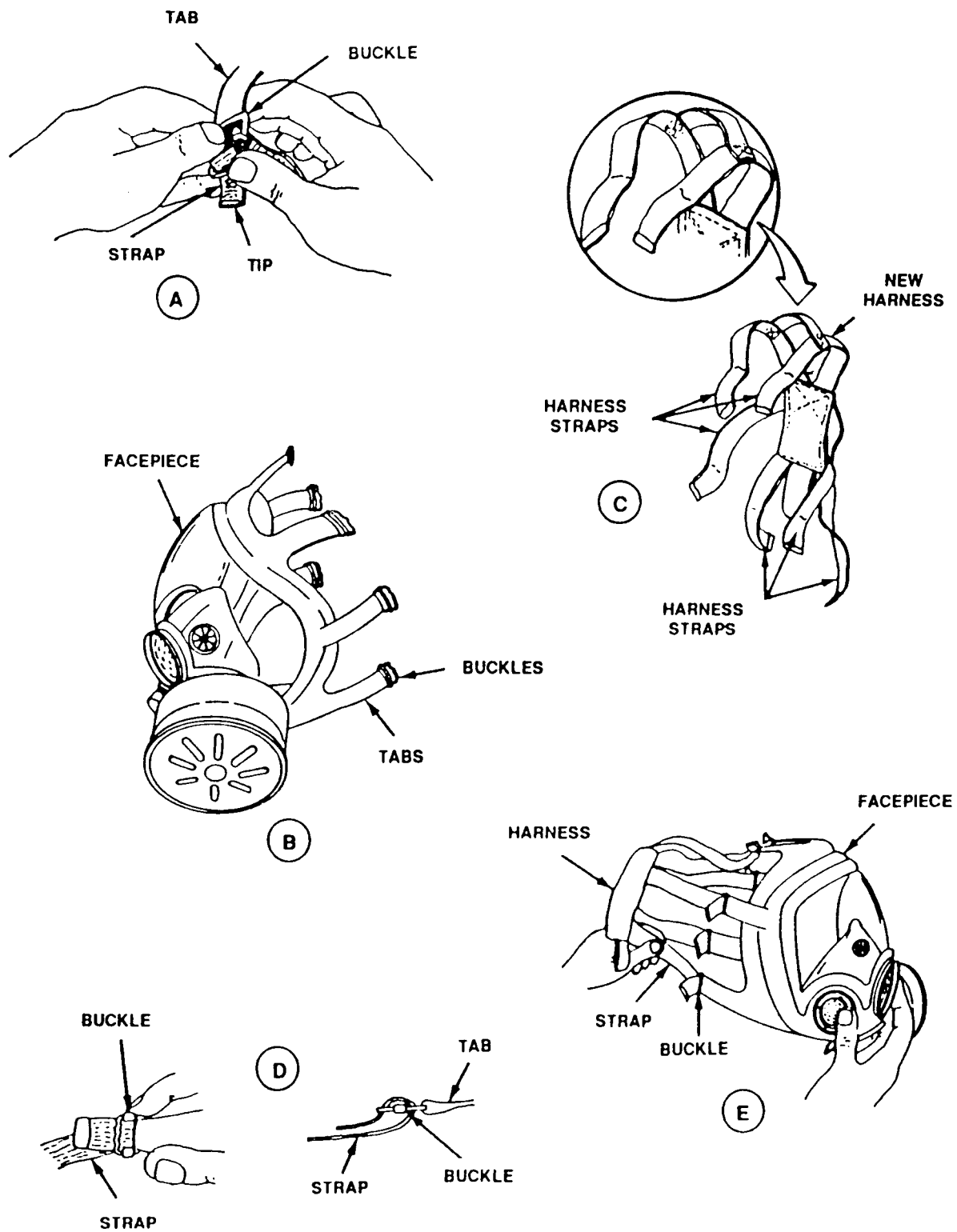


Figure 5-2. Head Harness Replacement

NOTE

The elastic webbing that joins the two forehead straps should be positioned at the top of the facepiece and on the outside of the harness.

- a. Position new harness in facepiece with straps next to correct buckles.
- b. Push tips into buckles at an angle. Work straps through buckles about one inch.
- c. Stretch each harness strap away from facepiece. Check that buckles hold straps tight.

5-13. Side Voicemitter Replacement.

(Figure 5-3)

5-14. Removal.

To remove the side voicemitter proceed as follows:

- a. Using the straight side of carrier shoulder strap D-ring, unscrew and take out voicemitter retaining ring.
- b. Reach inside mask and push out voicemitter.
- c. Lift out gasket. Discard gasket and voicemitter.

NOTE

The voicemitter and gasket will be replaced at the same time. The retaining ring will be replaced when required.

5-15. Installation.

To install the side voicemitter proceed as follows:

WARNING

Install a new gasket under side voicemitter each time It is removed. Reuse of the old gasket could result in leakage of toxic agents causing sickness or death.

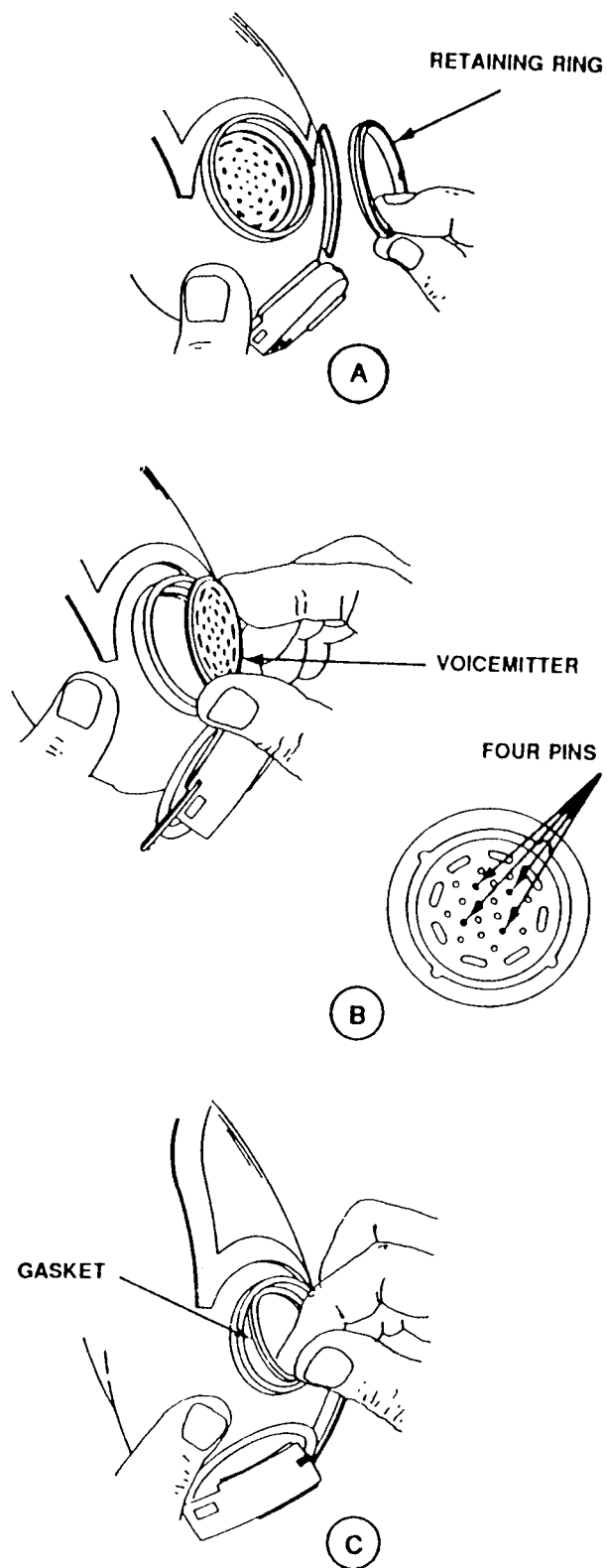


Figure 5-3. Side Voicemail Replacement

- a. Put new gasket Into port on facepiece and gently press into place.

WARNING

Ensure voicemitter Is installed with the flange and four pins facing outward. Incorrect installation could result in leakage of toxic agents Into the mask causIng sickness or death.

- b. Put voicemitter Into port with flange and four pins pointing towards outside of mask.
- c. Screw in retaining ring (slots outward) and hand-tighten using carrier D-ring.
- d. Perform leak check. See [paragraph 3-7](#).

5-16. Outlet Valve Cover Replacement.

(See [Figure 5-4](#).)

5-17. Removal.

To remove the outlet valve cover proceed as follows:

- a. Pull out drinking tube coupling from outlet valve cover.
- b. Pull cover tab down and gently peel cover away from outlet valve body.
- c. Stretch cover sideways to remove cover from stud.

5-18. Installation.

To install the outlet valve cover proceed as follows:

- a. Slip cover onto stud on top of outlet valve body. Fit cover over valve body.
- b. Push drinking tube coupling firmly into drinking tube stowage receptacle.

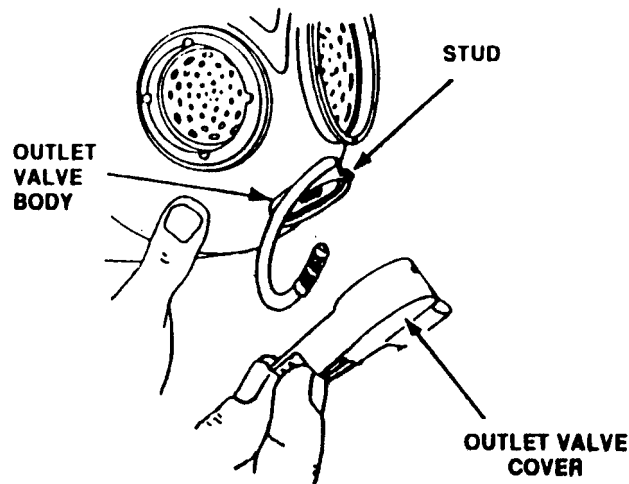


Figure 5-4. Outlet Valve Cover Replacement

5-19. Outlet Valve Disc Assembly Replacement.

(Figure 5-5)

5-20. Removal.

To remove the outlet valve disc assembly proceed as follows:

NOTE

The MCU-2/P outlet valve disc should be black. Clear or tan outlet valves should be replaced prior to puffing mask into service. Installation of the black outlet valve disc assembly will enhance the performance of the mask.

- Pull out drinking tube coupling from outlet valve cover drinking tube stowage receptacle.
- Pull cover tab down and gently peel cover away from outlet valve body stud.
- Stretch cover sideways to remove cover from stud.
- Hold disc between thumb and forefinger and gently pull from valve body. Discard disc assembly.

5-21. Installation.

To install the outlet valve disc assembly proceed as follows:

NOTE

The outlet valve disc assembly (Figure 5-5) is comprised of a black outlet valve disc and a plastic screen mesh disc inserted between the inside of the outlet valve disc and the shoulder of the valve stem. Ensure mesh screen disc is in place prior to installing outlet valve disc assembly.

- a. Push stem of disc through hole in center of valve body.
- b. Push and twist inward at center of disc until shoulder slips through hole in valve body.
- c. Smooth and flatten disc so that it touches valve body all around edge. Gently rotate disc to be sure it is seated correctly.

NOTE

If disc assembly does not rotate, it is not correctly seated.

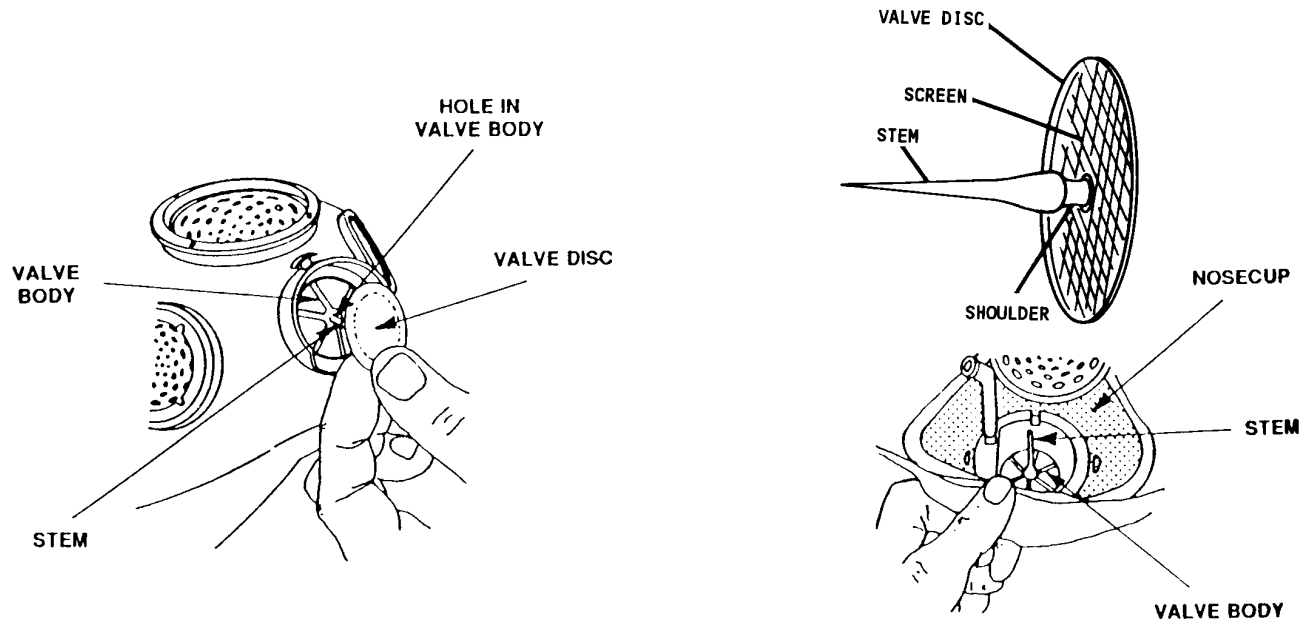


Figure 5-5. Outlet Valve Disc Assembly Replacement

- d. Slip cover onto stud on top of outlet valve body. Fit cover over valve body.
- e. Push drinking tube coupling firmly into drinking tube stowage receptacle.
- f. Perform a mask negative pressure check. See [paragraph 3-7](#).

5-22. Inlet Valve Assembly Replacement.

([Figure 5-6](#))

5-23. Removal.

To remove the inlet valve assembly proceed as follows:

- a. Unscrew and take off canister.
- b. Gently push center of valve body until it pops through port.
- c. Remove assembly from inside facepiece.
- d. Remove valve body from air deflector post.

- e. Lift disc off post. Discard disc.

5-24. Installation.

To install the inlet valve assembly proceed as follows:

- a. Push valve body into port. Be sure tabs face outward and groove in body seats in rim of port.
- b. Press disc onto post of air deflector assembly until it enters lower (narrow) groove.
- c. From inside facepiece, push air deflector assembly into valve body while holding valve body in port. Head of air deflector post must stick through hole in center of valve body. Side edges of air deflector shall be between the raised parallel guides on inside of facepiece.
- d. Rotate valve body using tabs to verify correct seating.
- e. Screw canister into mask handtight.
- f. Perform leak check. See [paragraph 3-7](#).

5-25. Nosecup Valve Disc Replacement.

([Figure 5-7](#)) Repeat steps if more than one disc requires replacement.

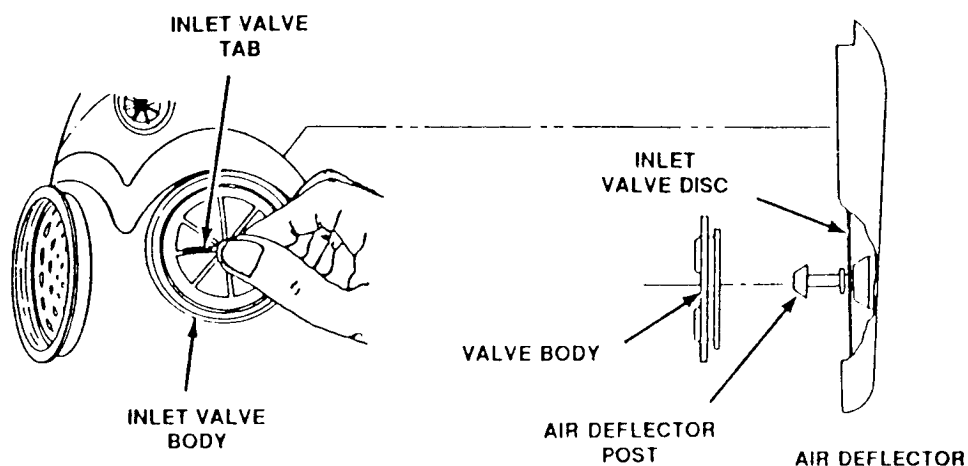


Figure 5-6. Inlet Valve Assembly Replacement

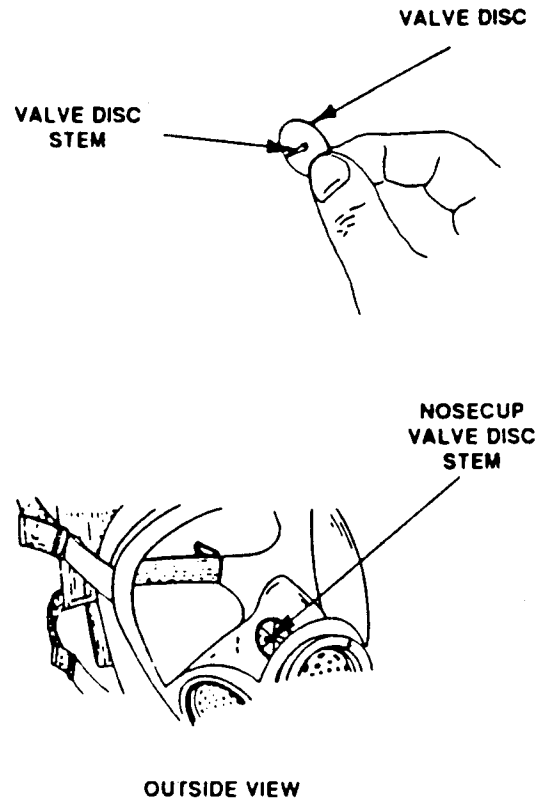


Figure 5-7. Nosecup Valve Disc Replacement

5-26. Removal.

To remove the nosecup valve disc proceed as follows:

- a. Turn head harness of mask inside out for access to nosecup.
- b. Curl back lip of nosecup to expose nosecup valves.
- c. Raise edge of valve disc. With forefinger and thumb, lift edge of disc. Gently pull disc from hole in center of valve seat.

5-27. Installation.

To install the nosecup valve disc proceed as follows:

- a. Hold disc between thumb and forefinger.
- b. Push stem of disc through hole in center of valve seat so that disc will be on the inside of nosecup.
- c. To seat disc, grasp the stem and pull outward until the shoulder slips through hole in the valve seat.
- d. Smooth disc so that it lies flat. Gently rotate disc with finger to be sure disc does not bind and is seated correctly.

5-28. External Drinking Tube Replacement.

(Figure 5-8)

NOTE

The following procedure applies for all Scott and MSA masks: Exception, MSA masks lot numbers MSA 50-1 through MSA 50-18 will be condemned if external drinking tank replacement is required.

5-29. Removal.

To remove the drinking tube proceed as follows:

- Unscrew and remove canister.
- Pull out drinking tube coupling from outlet valve cover.
- Pull cover tab down and gently peel cover away from outlet valve body.
- Stretch cover sideways to remove cover from stud.

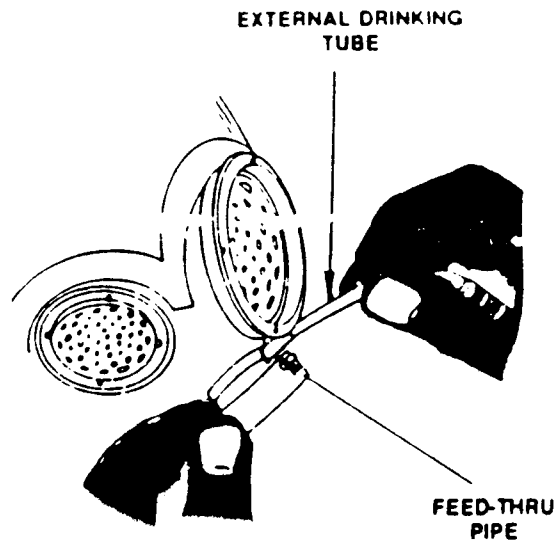


Figure 5-8. External Drinking Tube Replacement

NOTE

Drinking tube is a tight fit on the feedthru pipe. Removal of the drinking tube could be difficult.

- Grasp tube and pull off from feed-thru pipe.

5-30. Installation.

To install the drinking tube proceed as follows:

- a. Push and twist tube onto feed-thru pipe. Be sure end of tube is pushed fully onto feed-thru pipe and that the tube points upwards.
- b. Slip cover onto stud on top of outlet valve body. Fit cover over valve body.
- c. Push drinking tube coupling firmly into drinking tube stowage receptacle.
- d. Screw canister into mask and handtighten.
- e. Test drinking tube. See [paragraph 4-19](#).
- f. Perform leak check. See [paragraph 3-7](#).

5-31. Internal Drinking Tube Replacement.

5-32. Removal.

To remove the internal drink tube, pull the tube off of the feed-thru pipe on the outlet valve body.

5-33. Installation.

To install the internal drinking tube, proceed as follows:

- a. Clean feed-thru pipe connector.
- b. Push and twist tube onto feed-thru pipe. Be sure end of tube is pushed fully onto feed-thru pipe.
- c. Perform drink tube leak check. See [paragraph 3-6](#).

5-34. Internal Microphone Installation.

- a. Installation. To install an internal microphone proceed as follows:

1. Place mask on a flat surface, with head harness facing toward you.
2. Position head harness so you can easily work on the inside area of mask.
3. Find and examine microphone connector assembly located in front of the front voicemitter area ([Figure 5-9](#)).
4. Position microphone connector pins so that the microphone can be easily attached.
5. Place microphone facing where mouth will be positioned when wearing mask. Slide microphone all the way up the pins until microphone stops ([Figure 5-9](#)).
6. Tighten two set screws located at base of microphone using a screwdriver or hex wrench as required. The set screws when tight will lock microphone in place.
7. Check mask microphone with a compatible working communications system and test the system to ensure that everything is in working order.
8. Some microphones are available with an additional attachment by means of two 2-56 screws. These two screws are assembled through holes in the microphone connector and threaded into the base of the microphone housing.
9. Position microphone in a comfortable position close to the lips. The two black connector wires are flexible and can be positioned easily.

5-35. Outsert Rubber Strap Replacement.

5-36. Removal.

Pull on ends of rubber strap until they pop loose.

5-37. Installation.

Push in ends of rubber strap into holes on outsert until they enter fully. Remove any excess strap as required.

5-38. REASSEMBLY.

No other reassembly required.

5-39. TEST.

No testing, other than those tests already listed, is required.

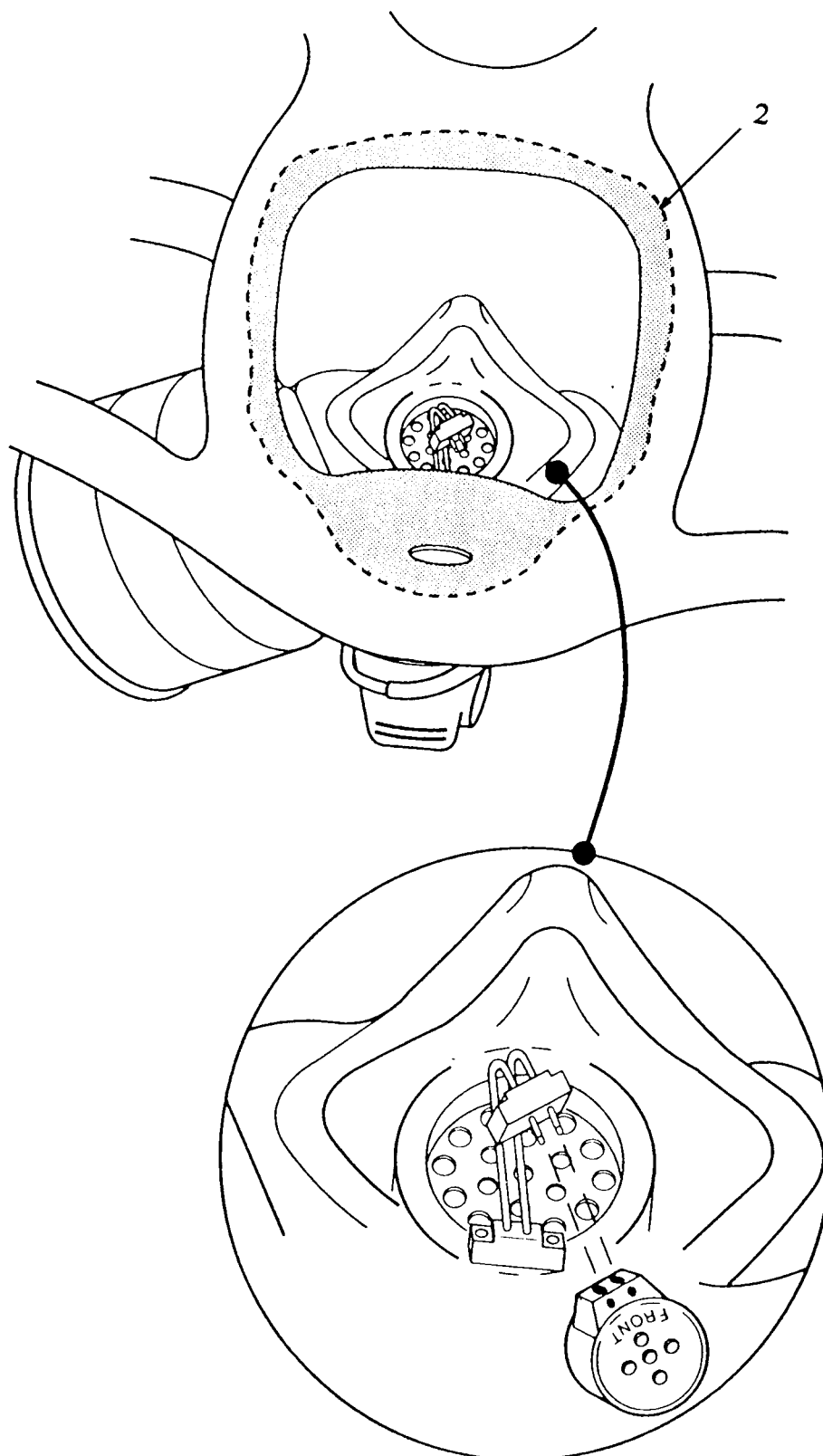


Figure 5-9. Typical MCU-2A/P Internal Microphone Installation

SECTION VI

MAINTENANCE AND ACCESSORIES PARTS LISTS

6-1. INTRODUCTION.

6-2. Maintenance Parts List.

This Maintenance Parts List (MPL) lists, describes, and illustrates the assemblies, subassemblies and detail parts of the MCU-2/P mask.

6-3. General Use.

In general, the assemblies and parts installed at the time the MCU-2/P mask was procured are listed and identified in the manual. When an assembly or part (including vendor items), which is different from the original, was installed during the manufacture of later items, series, or blocks, all assemblies and parts are listed (and "Used On" coded). However, when the original assembly or part does not have continued application (no spares of the original were procured or such spares are no longer authorized for replacement), only the preferred assembly or part is listed. Also, when an assembly or part was installed during modification, and the original does not have continued application, only the preferred item is listed. When a standard size part can be replaced with an oversize or undersize part, the latter parts, showing sizes, are also listed. Repair Parts Kits and Quick Change Units are listed when they are available for replacement.

6-4. SYMBOLS.

6-5. Symbols.

Decals and vinyl film markings are not used on the MCU-2/P.

6-6. COMMERCIAL AND GOVERNMENT ENTITY (CAGE).

6-7. Numerical Listing.

All CAGE listed in the CAGE column of the Maintenance Parts List (MPL) are arranged in numerical sequence with the complete name and address of the appropriate manufacturer or Government Agency following each CAGE as follows:

Numerical Cage Listing

CAGE	NAME AND ADDRESS 03038
	Long-Lok Fasteners Corp 13709 S Normandie Ave Gardena, CA 90249-2609
165725	Sonetronics Inc 1718 H Street PO Box L West Belmar, NJ 07719-3140
4N427	Criss Optical Mfg. Co. Inc. 3628 S. West Street P.O. Box 12267 Wichita, KS 67277
55799	Mine Safety Appliance Company 3880 Meadowbrook Road Murrysville, PA 15668
6A659	Mine Safety Appliances Company 2 Esmond Street Esmond, RI 02917
64616	Defense Medical Standardization Board Fort Detrick bldg 833 Fredrick, MD 21701
81349	US Navy Clothing and Textile Research Facility Natick, MA 01760
81361	U.S. Army Armament Research and Development Command Aberdeen Proving Ground, MD 21010
92114	Scott Aviation Sierra Products Division 1900 Walker Ave Monrovia, CA 91016
98752	Warner Robins ALC Robins AFB, GA 31098

6-8. Alphabetical Listing.

All manufacturers and Government Agencies listed in the description column of the MPL are listed in alphabetical sequence as follows:

Alphabetical Cage Listing	
NAME AND ADDRESS	CAGE
Criss Optical Mfg. Co. Inc. 3628 S. West Street P.O. Box 12267 Wichita, KS 67277	4N427
Defense Medical Standardization Board Fort Detrick Bldg 8330 Fredrick, MD 21701	64616
Long-Lok Fasteners Corp. 13709 S Normandie Ave Gardena, CA 90249-2609	03038
Mine Safety Appliances Company 3880 Meadowbrook Road Murrysville, PA 15668	55799
Mine Safety Appliance Company 2 Esmond Street Esmond, RI 02917	6A659
Scott Aviation Sierra Products Division 1900 Walker Ave Monrovia, CA 91016	92114
U.S. Army Armament Research and Development Command Aberdeen Proving Ground, MD 21010	81361
US Navy Clothing and Textile Research Facility Natick, MA 01760	81349
Warner Robins ALC Robins AFB, GA 31098	98752

6-9. USED ON CODES.

When two or more assemblies or subassemblies (having a serial affectivity or a specific usability related to the next higher assembly) are listed in the same MPL, a code letter ("A", "B", etc.) is assigned to each main assembly. All subcomponents that are peculiar to a particular assembly are identified by the same code letter as the main assembly. If parts are common to the end Rem or main assembly, the "USED ON CODE" column is left blank.

6-10. SOURCE, MAINTENANCE AND RECOVERABILITY (SMR) CODES.

Definitions of applicable Source, Maintenance, and Recoverability Codes (SMR) are set forth in SPCC INSTRUCTION 4441.170A the Coordinated Shipboard/and shore base Allowance List (COSAL).

6-11. REPAIR PARTS KITS.

Not applicable.

6-12. REPLACEMENT PARTS.

Fleet allowance for replaceable MCU-2/P parts can be found in allowance parts list (APL's):

[A]	470030001 [Small]
[B]	470030002 [Medium]
[C]	470030003 [Large]

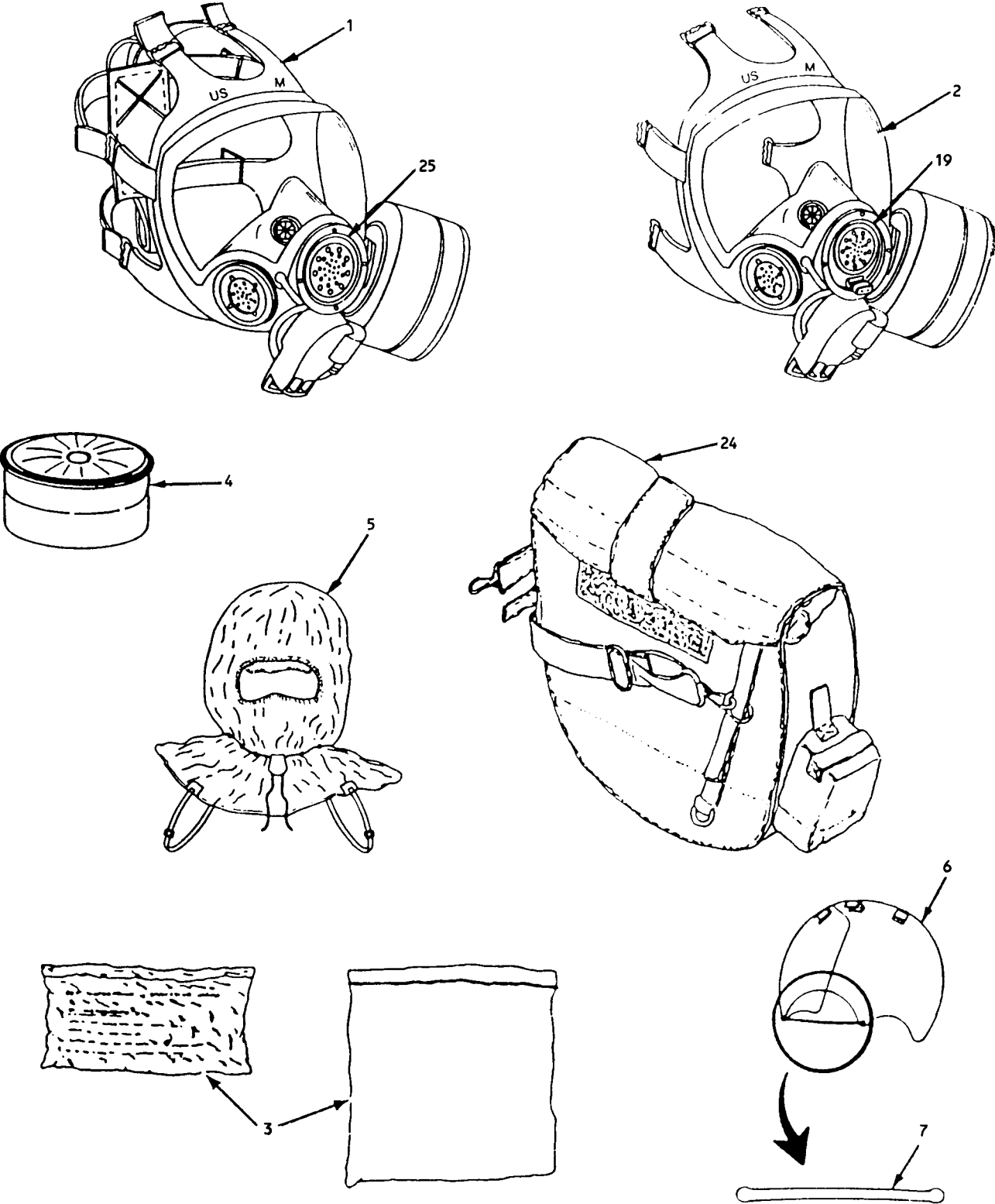


Figure 6-1. MCU-2/P and MCU-2A/P Mask (Including Accessories) (Sheet 1 of 5)

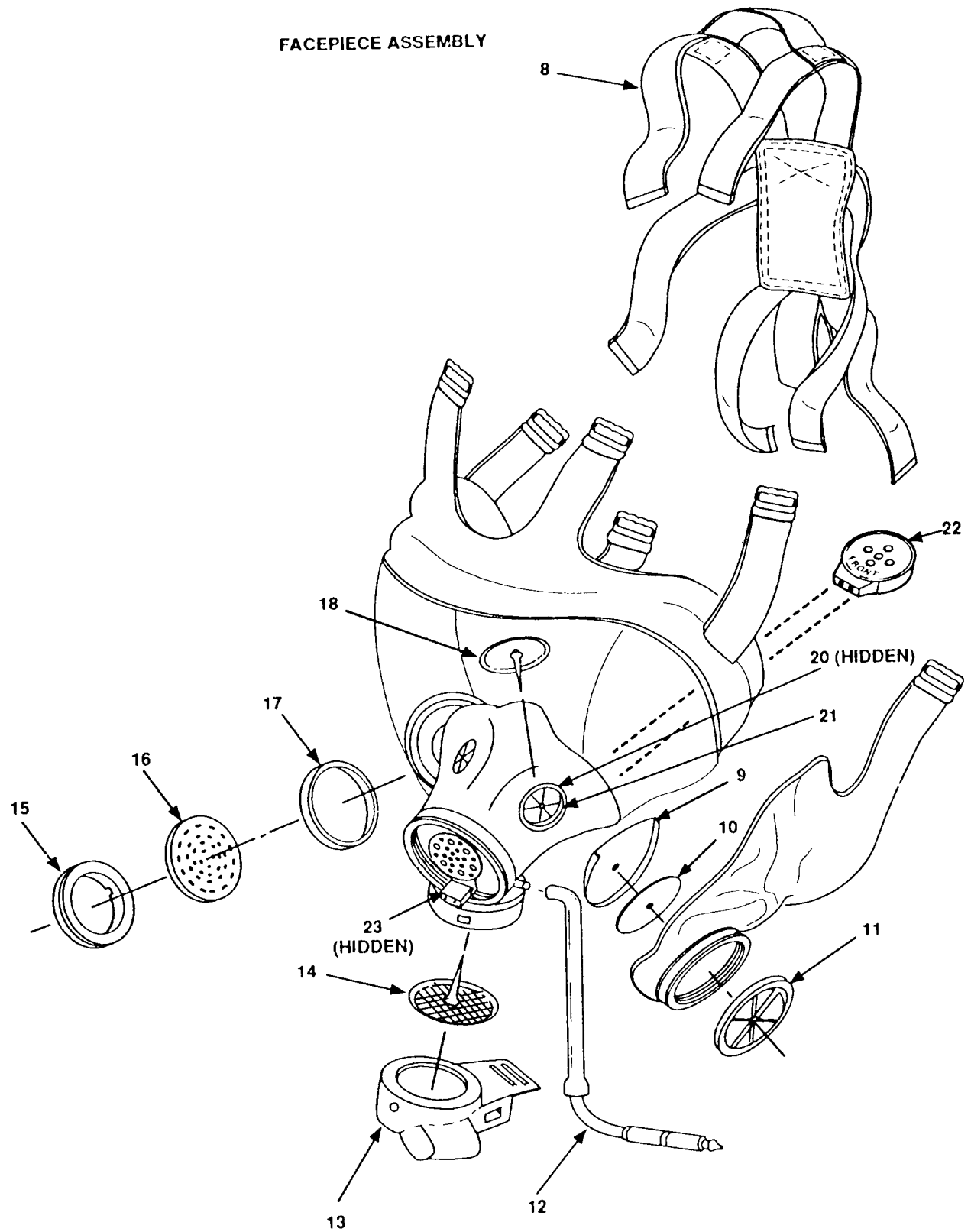


Figure 6-1. MCU-2/P and MCU-2A/P Mask (Including Accessories) (Sheet 2 of 5)

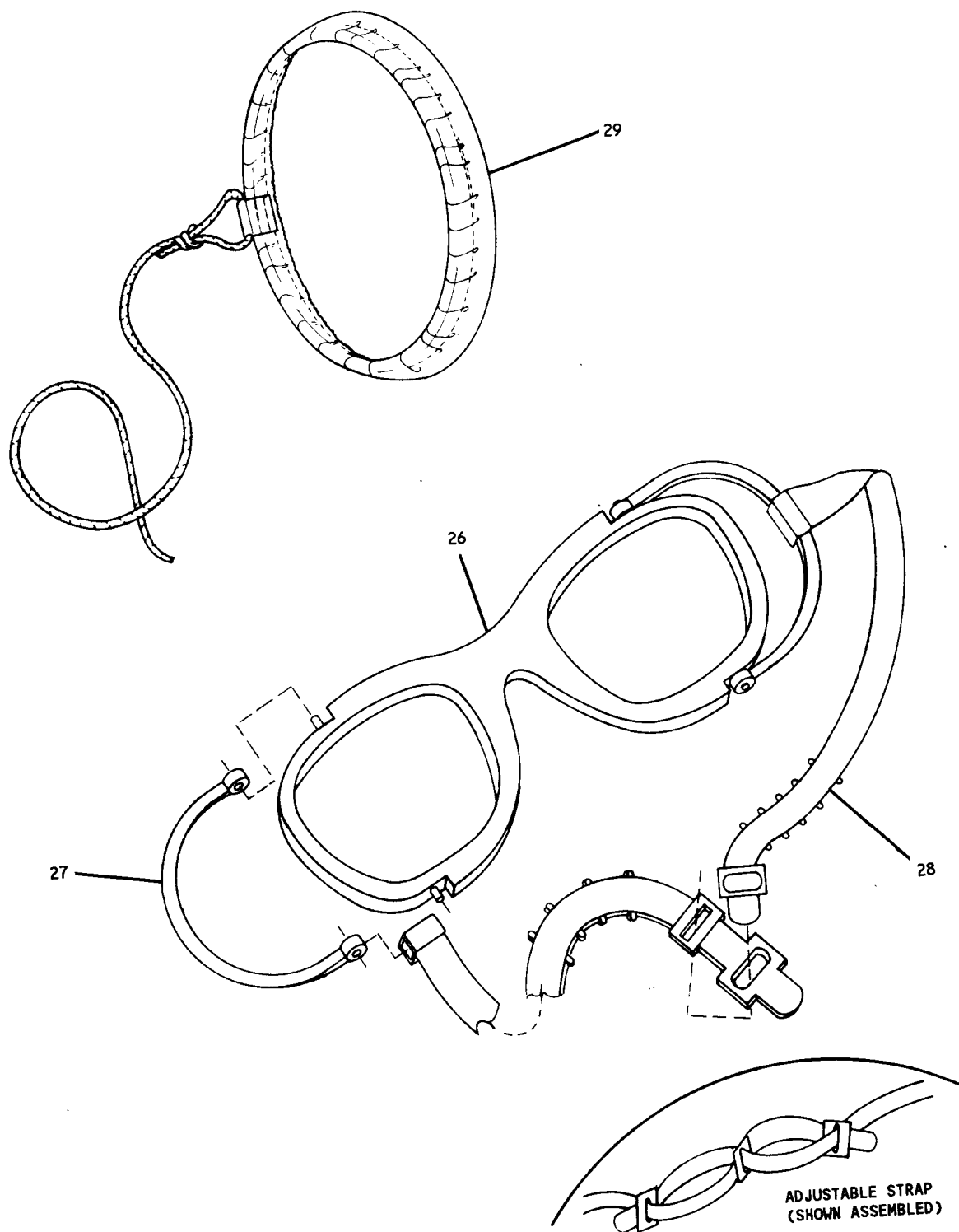


Figure 6-1. MCU-2/P and MCU-2A/P Mask (Including Accessories) (Sheet 3 of 5)

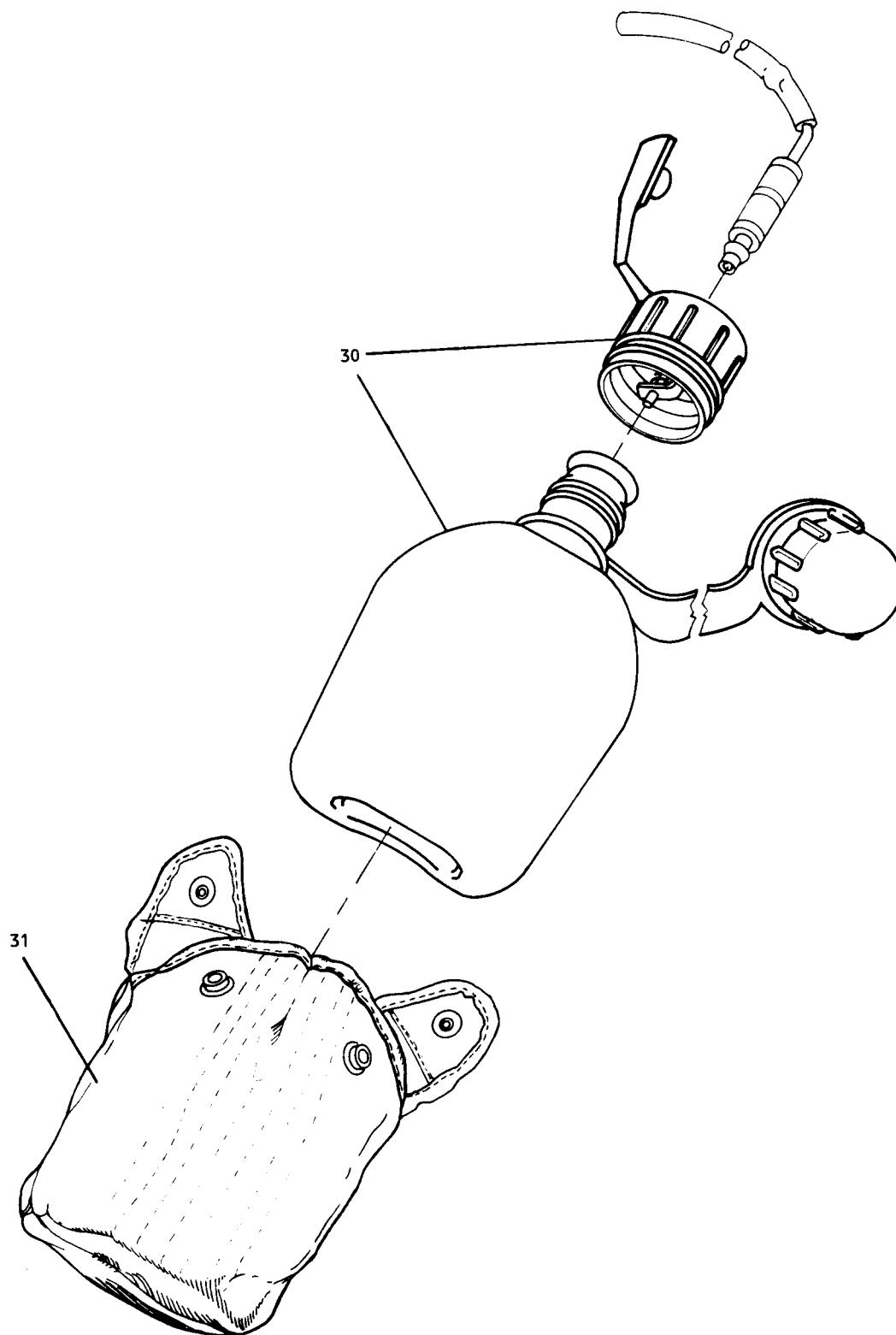


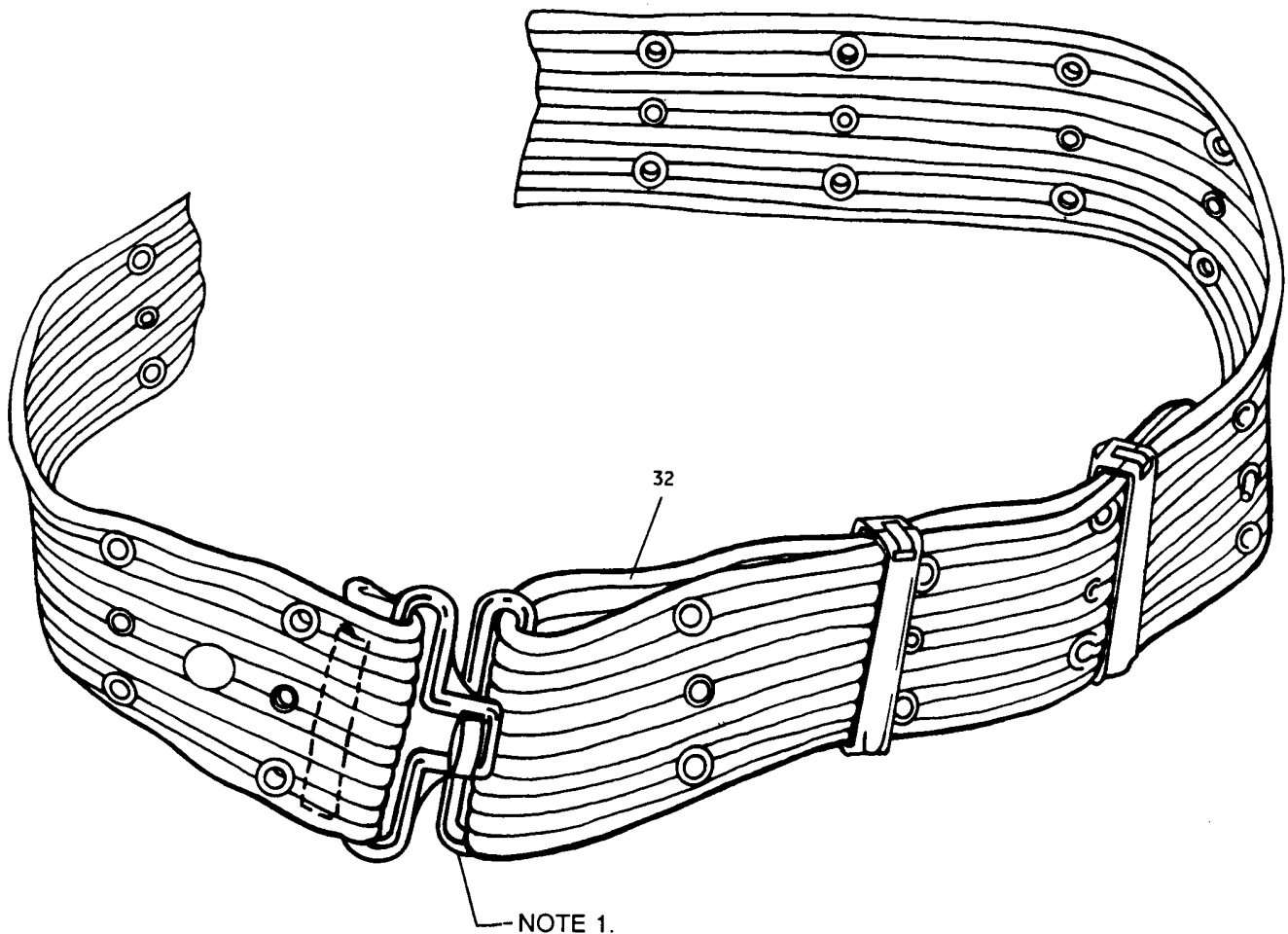
Figure 6-1. MCU-2/P and MCU-2A/P Mask (Including Accessories) (Sheet 4 of 5)

NOTE 3.

THE WEBB BELT COMES IN TWO SIZES:
MED: FOR WAIST SIZES UNDER 30"
LG: FOR WAIST SIZES 30" & OVER

NOTE 2.

CANTEEN SHALL BE WORN
ON RIGHT SIDE OF BELT
TO PREVENT INTERFERENCE
WITH CHEMICAL PROTECTIVE
MASK



BUCKLE TYPE MAY VARY

Figure 6-1. MCU-2/P and MCU-2A/P Mask (Including Accessories) (Sheet 5 of 5)

MCU-2/P and MCU-2A/P Mask (Including Accessories) - Parts List

FIGURE & INDEX NO.	PART NUM- BER	CAGE	DESCRIPTION	UNITS PER ASSY	USED ON CODE	SMR
6-1-1	864-01-1 304907	92114 6A659	MASK, CHEMICAL-BIOLOGICAL- RADIOLOGICAL MCU-2/P (SMALL) (4240-01-175-3443)	1	A'	PEOFFU
	864-01-2 304908	92114 6A659	MASK, CHEMICAL-BIOLOGICAL- RADIOLOGICAL MCU-2/P (MEDIUM) (4240-01-175-3444)	1	A'	PEOFFU
	864-01-3 304909	92114 6A659	MASK, CHEMICAL-BIOLOGICAL- RADIOLOGICAL MCU-2/P (LARGE) (4240-01-175-3445)	1	A'	PEOFFU
6-1-2	88115001-1	98752	MASK, CHEMICAL-BIOLOGICAL- RADIOLOGICAL MCU-2A/P (SMALL) (4240-01-327-4148)	1		PEOFFU
	88115001-2	98752	MASK, CHEMICAL-BIOLOGICAL- RADIOLOGICAL MCU-2A/P (MEDIUM) (4240-01-327-4149)	1	B'	PEOFFU
	88115001-3	98752	MASK, CHEMICAL-BIOLOGICAL- RADIOLOGICAL MCU-2A/P (LARGE) (4240-01-327-4150)	1	B	PEOFFU
	864-30-1	92114	FACEPIECE ASSEMBLY, FIELD (SMALL)	1		XA
	864-30-2	92114	FACEPIECE ASSEMBLY, FIELD (MEDIUM)	1		XA
	864-30-3	92114	FACEPIECE ASSEMBLY, FIELD (LARGE)	1		XA
6-1-3	C5-75-2	55799	BAG, WATERPROOFING (4240-00- 803-5839) OR BAG, ZIPLOCK (4240- 00-377-9401)	1		PAOZZN
6-1-4	D5-3-1500	81361	CANISTER, CHEMICAL- BIOLOGICAL (4240-01-119-2315)	1		PAOZZN
6-1-5	864-55	92114	HOOD, MASK FIELD (4240-01-189- 9423)	1		PAOZZN
6-1-6	88115074-1	98752	OUTSERT, SMALL (CLEAR) (4240- 01-224-4195)	1		PAOZZN
	88115075-1	98752	OUTSERT, MEDIUM/LARGE (CLEAR) (4240-01-224-4197)	1		PAOZZN
	88115074-2	98752	OUTSERT, SMALL (TINTED) (4240- 01-247-9107)	1		PAOZZN
	88115075-2	98752	OUTSERT, MEDIUM/LARGE (TINTED) (4240-01-249-4438)	1		PAOZZN
6-1-7	88115073	98752	STRAP, RUBBER (4240-01-223-7312)	1		PAOZZN
6-1-8	88115066	81361	HARNESS, HEAD (4240-01-223-7313)	1		PAOZZ
6-1-9	88115031	98752	AIR DEFLECTOR ASSEMBLY (4240- 01-286-1842)	1		PAOZZ
6-1-10	88115052	98752	DISC, INLET VALVE (4240-01-224- 6336)	1		PAOZZ
6-1-11	88115051	98752	BODY, INLET VALVE (4820-01-226- 7005)	1		PAOZZ

MCU-2/P and MCU-2A/P Mask (Including Accessories) - Parts List -

Continued

FIGURE & INDEX NO.	PART NUM- BER	CAGE	DESCRIPTION	UNITS PER ASSY	USED ON CODE	SMR
6-1-12	88115054	98752	DRINKING TUBE ASSEMBLY, EXTERNAL (4240-01-286-1841)	1		PAOZZ
6-1-13	88115065	98752	COVER, OUTLET VALVE (4240-01- 241-4913)	1		PAOZZ
6-1-14	9137683	98752	DISC, OUTLET VALVE ASSEMBLY (4240-01-334-6824)	1		PAOZZ
6-1-15	88115050	98752	RING, RETAINING SIDE VOICEMITTER (5365-01-222-3145)	1		PAOZZ
6-1-16	88115041	98752	VOICEMITTER, SIDE (4240-01-224- 4198)	1		PAOZZ
6-1-17	88115048	81361	GASKET, VOICEMITTER SIDE PORT (5330-01-260-8702)	1		PAOZZ
6-1-18	88115029	98752	DISC, NOSECUP VALVE (4240-01- 246-1996)	2		PAOZZ
6-1-19	88115035	98752	VOICEMITTER FRONT	1	B	
6-1-20	88115053	98752	DRINKING TUBE, INTERNAL (4240- 01-286-1843)	1		PAOZZ
6-1-21	88115030	98752	VALVE, NOSECUP SEAT (4820-01- 286-1833)	2		PAOZZ
6-1-22	VARIOUS		MICROPHONE ELEMENT	1		PAOZZ
6-1-23	LP57N26S5	03038	SCREW, SELF LOCKING (5305-01- 040-4682) (OPTIONAL) (NOT ILLUS- TRATED)	2		PAOZZ
6-1-24	864-33	92114	CARRIER, CHEMICAL-BIOLOGICAL FIELD MASK (4240-01-224-4196)	1		PAOZZ
6-1-25	864-10	92114	VOICEMITTER, FRONT (4240-01- 224-0351)	1	A	
6-1-26	N/A	64616	SPECTACLE, COMBAT, MAG-1 REGULAR, SIZE 46-22 (6540-01-107- 0304)	1		PEOFF
		64616	SPECTACLE, COMBAT, MAG-1 REGULAR, SIZE 48-22 (6540-01-107- 0305)	1		PEOFF
6-1-27	N/A	4N427	BRIDLE, FRAME, SPECTACLE, MAG-1, REGULAR (6540-01-294- 1142)	2		PEOFF
6-1-28	N/A	64616	STRAP, SPECTACLE FRAME (6540- 01-109-5040)	1		PEOFF
6-1-29	353-1382	92114	COVER, CANISTER DUST (1660-01- 006-3089)	1		PAOZZ
6-1-30	MIL-C-43103	81349	CANTEEN, 1 QT (FURNISHED WITH M-1 CAP) (8465-01-115-0026)	1		PAOZZ
6-1-31	MIL-C-43742	81349	COVER, CANTEEN, 1 QT (8465-00- 860- 0256)	1		PAOZZ

MCU-2/P and MCU-2A/P Mask (Including Accessories) - Parts List -

Continued

FIGURE & INDEX NO.	PART NUM- BER	CAGE	DESCRIPTION	UNITS PER ASSY	USED ON CODE	SMR
6-1-32	MIL-B-43826	81349	BELT, WEBB, UTILITY (8465-01-322-1965) (med) (8465-01-322-1966) (1g)	1		PAOZZ

^AUSABLE ON MCU-2/P^BUSABLE ON MCU-2A/P

